PENTAIR WAREHOUSE EXPANSION

DRAFT INITIAL STUDY/ MITIGATED NEGATIVE DECLARATION
Moorpark, CA

Prepared for:

CITY OF MOORPARK
799 Moorpark Avenue
Moorpark, California 93021

Prepared by:

CHAMBERS GROUP, INC.
600 West Broadway, Suite 250
Glendale, California 91204

July 2022

This page intentionally left blank

TABLE OF CONTENTS

Page

SECTION 1.0 – PROJECT DESCRIPTION AND ENVIRONMENTAL SETTING 1
1.1 PROJECT PURPOSE AND BACKGROUND 1
1.2 PROJECT LOCATION AND SITE CHARACTERISTICS 1
1.2.1 Location 1
1.2.2 Site Access and Circulation 1
1.2.3 General Plan Designation/Zoning 2
1.3 PROJECT DESCRIPTION 5
1.3.1 Construction 5
1.3.2 Operations 6
1.3.3 Permits 6

SECTION 2.0 – ENVIRONMENTAL DETERMINATION 7
2.1 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED: 7
2.2 DETERMINATION 7

SECTION 3.0 – EVALUATION OF ENVIRONMENTAL IMPACTS 8

SECTION 4.0 – CHECKLIST OF ENVIRONMENTAL ISSUES 10
4.1 AESTHETICS 10
4.1.1 Impact Analysis 10
4.2 AGRICULTURE & FORESTRY RESOURCES 11
4.2.1 Impact Analysis 12
4.3 AIR QUALITY 13
4.3.1 Environmental Setting 13
4.3.2 Impact Analysis 16
4.4 BIOLOGICAL RESOURCES 22
4.4.1 Environmental Setting 22
4.4.2 Impact Analysis 23
4.5 CULTURAL RESOURCES 25
4.5.1 Environmental Setting 25
4.5.2 Impact Analysis 25
4.6 ENERGY 27
4.6.1 Environmental Setting 27
4.6.2 Impact Analysis 28
4.7 GEOLOGY AND SOILS 32
4.7.1 Environmental Setting 33
4.7.2 Impact Analysis 33
4.8 GREENHOUSE GAS EMISSIONS 36
4.8.1 Environmental Setting 36

4.8.2 Impact Analysis 37
4.9 HAZARDS AND HAZARDOUS MATERIALS 39
4.9.1 Environmental Setting 39
4.9.2 Impact Analysis 40
4.10 HYDROLOGY AND WATER QUALITY 42
4.10.1 Environmental Setting 43
4.10.2 Impact Analysis 43
4.11 LAND USE AND PLANNING 45
4.11.1 Impact Analysis 45
4.12 MINERAL RESOURCES 47
4.12.1 Impact Analysis 47
4.13 NOISE 48
4.13.1 Impact Analysis 48
4.14 POPULATION AND HOUSING 50
4.14.1 Impact Analysis 50
4.15 PUBLIC SERVICES 51
4.15.1 Impact Analysis 51
4.16 RECREATION 53
4.16.1 Impact Analysis 53
4.17 TRANSPORTATION 53
4.17.1 Environmental Setting 54
4.17.2 Impact Analysis 54
4.18 TRIBAL CULTURAL RESOURCES 56
4.18.1 Impact Analysis 56
4.19 UTILITIES AND SERVICE SYSTEMS 59
4.19.1 Impact Analysis 60
4.20 WILDFIRE 61
4.20.1 Impact Analysis 62
4.21 MANDATORY FINDINGS OF SIGNIFICANCE 63
4.21.1 Impact Analysis 64

SECTION 5.0 – REFERENCES 66

LIST OF APPENDICES

APPENDIX A – AIR QUALITY EMISSIONS MODEL OUTPUT
APPENDIX B – BIOLOGICAL TECHNICAL REPORT
APPENDIX C – CULTURAL RESOURCES REPORT
APPENDIX D – ENERGY MODEL OUTPUT
APPENDIX E – GEOTECHNICAL REPORT
APPENDIX F – PALEONTOLOGICAL REPORT
APPENDIX G – GREENHOUSE GAS MODEL OUTPUT
APPENDIX H – PHASE I ENVIRONMENTAL SITE ASSESSMENT
APPENDIX I – HYDROLOGY REPORT
APPENDIX J – LOW IMPACT DEVELOPMENT STUDY
APPENDIX K – TRAFFIC AND CIRCULATION STUDY
APPENDIX L – VEHICLE MILES TRAVELED ANALYSIS
APPENDIX M – MITIGATION MONITORING AND REPORTING PROGRAM

LIST OF TABLES

Page

Table 1: General Plan Land Use Designation / Zoning/ Existing Land Use 2

Table 2: VCAPCD Attainment Designations 15

Table 3: Ambient Air Quality Monitoring Summary 15

Table 4: Construction-Related Maximum Daily Criteria Pollutant Emissions 18

Table 5: Operations-Related Maximum Daily Criteria Pollutant Emissions 19

Table 6: Annual Greenhouse Gas Emissions from the Proposed Project 38

LIST OF FIGURES

Page

Figure 1. Vicinity Map 3

Figure 2. Project Site Plan 4

SECTION 1.0 – PROJECT DESCRIPTION AND ENVIRONMENTAL SETTING

1.1 PROJECT PURPOSE AND BACKGROUND

Pentair Pool Products (Pentair) is the largest producer of consumer and commercial pool equipment within the United States and has been a presence in the city of Moorpark since 1987. Pentair is also the largest employer for the city; currently providing approximately 700 jobs. Pentair has outgrown its 234,000-square-foot existing building and is seeking to expand its operation with an additional building within Moorpark.

Pentair has engaged Amir Development Company on behalf of Moorpark Lot A, LP (Applicant) to submit an Industrial Planned Development Permit (IPD) and Conditional Use Permit (CUP) to develop a 90,566-square-foot industrial building and associated site improvements (Project, Proposed Project) on 5.65 acres of land adjacent and directly to the east of the existing facility located at 10951 Los Angeles Avenue in Moorpark, Ventura County (County), California. The proposed industrial building would be occupied by Pentair for warehousing and storage of raw material and distribution of finished goods including pool equipment and accessories.

The City of Moorpark (City) is the lead agency for the Proposed Project. This Initial Study (IS) has been prepared in accordance with California Environment Quality Act (CEQA) (Public Resources Code §21000 et seq.) and the State CEQA Guidelines (Title 14, California Code of Regulations [CCR], §15000 et seq.) and has determined that preparation of a Mitigated Negative Declaration would be appropriate under CEQA.

1.2 PROJECT LOCATION AND SITE CHARACTERISTICS

1.2.1 Location

The Project site is located on the north side of California State Route 118 (Los Angeles Avenue) and east of Montair Drive (see Figure 1). The Project site is located at 10941 Los Angeles Avenue with Assessor's Parcel Number (APN) 511-0-200-265. The Project site is adjacent to an industrial building to the west (Pentair), a vacant lot to the east, and agricultural uses to the south and north of the Project site. The Union Pacific Railroad right-of-way is also located to the north of the subject property.

1.2.2 Site Access and Circulation

Primary vehicular access to the Project site will be provided through Montair Drive, which is an existing 30-foot to 40-foot-wide easement. Montair Drive crosses the neighboring Pentair site and connects to the northwest corner of the Project site. Figure 2 shows the site plan with proposed primary access across the adjacent site. Montair Drive connects to Los Angeles Avenue via an existing intersection with turn lanes in each direction. Secondary (emergency) vehicular access to the Project site will be provided via a new 35-foot-wide bridge spanning the Gabbert Canyon Debris Basin as a driveway off Los Angeles Avenue that would provide both truck and vehicle access. The site also features a 45-foot-wide lane located on the west side of the Project site for truck access to the loading docks and a 30-foot-wide drive lane throughout the remainder of the Project site for vehicular traffic. The Project site is approximately 2.1 miles west of the Moorpark Train Station located at 300 High Street.

1.2.3 General Plan Designation/Zoning

The City's General Plan Land Use designation for the subject property is Medium Industrial (I-2). The purpose and intent of l-2 is to provide for intensive industrial uses including light manufacturing, processing, fabrication, and other non-hazardous industrial uses. The zoning designation for the Project site is Limited Industrial (M-2). The purpose of this zone is to provide suitable areas for the development of a broad range of industrial uses and quasi-industrial activities of a light manufacturing, processing, or fabrication nature while providing appropriate safeguard for adjoining industrial sites, nearby nonindustrial properties, and the surrounding community.

Table 1 identifies the General Plan Land Use designation, zoning, and existing land uses within the vicinity.

Table 1: General Plan Land Use Designation / Zoning/ Existing Land Use

Direction	General Plan Land Use Designation	Zoning /	Existing Land Use
Project Site	Medium Industrial (I-2)	Limited Industrial (M-2)	Vacant land
North	Agricultural	Agricultural Exclusive (AE-40) (County), Rural Exclusive (RE)	Agricultural and Union Pacific Railroad Right-of-Way
South	Agricultural	Agricultural Exclusive (AE-40) (County)	East Los Angeles Avenue/California State Route 118, Agricultural
East	Medium Industrial (I-2)	Limited Industrial (M-2)	Vacant land
West	Medium Industrial (I-2)	Limited Industrial (M-2)	Industrial building (Pentair)

Figure 1. Vicinity Map

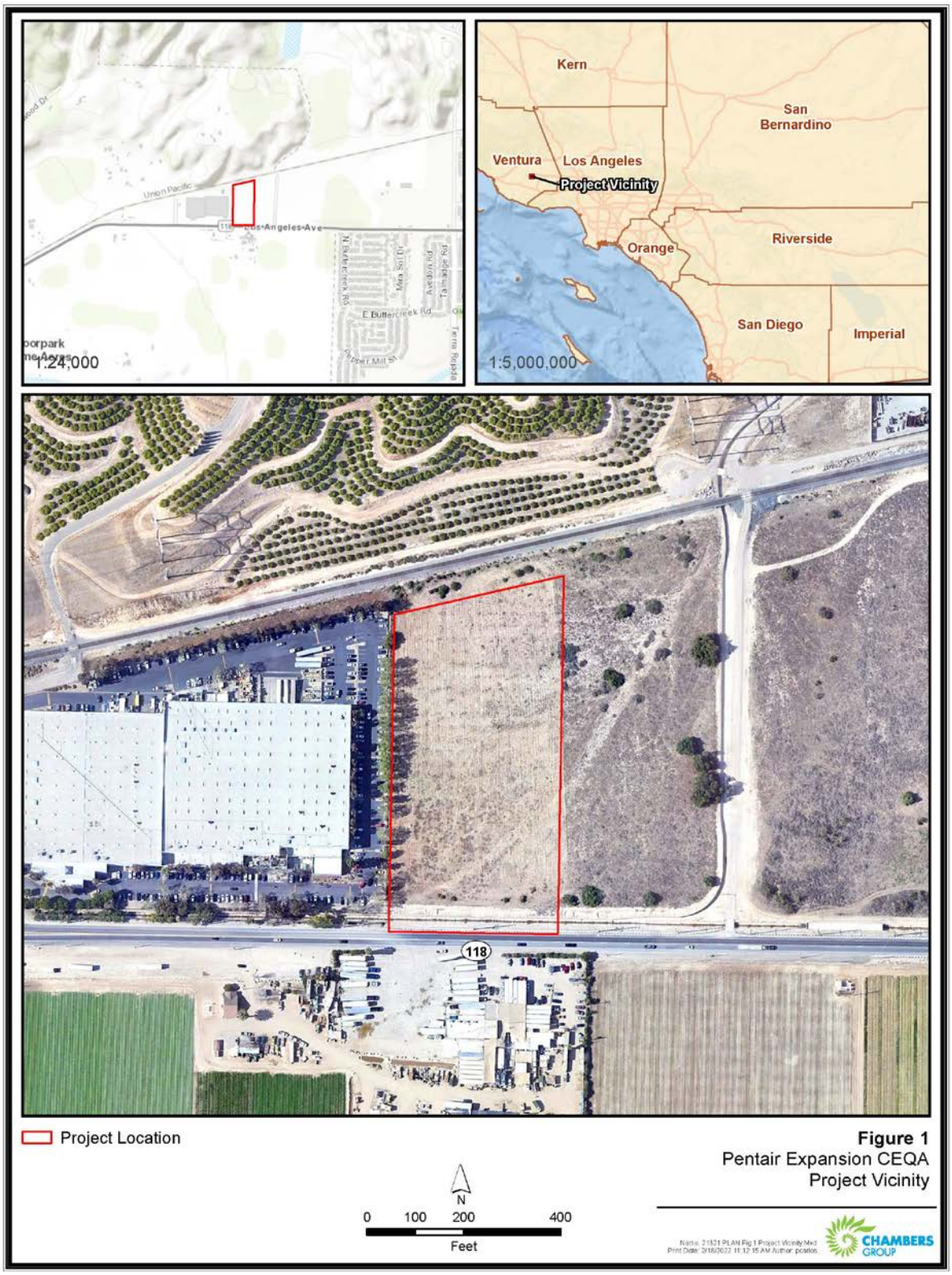
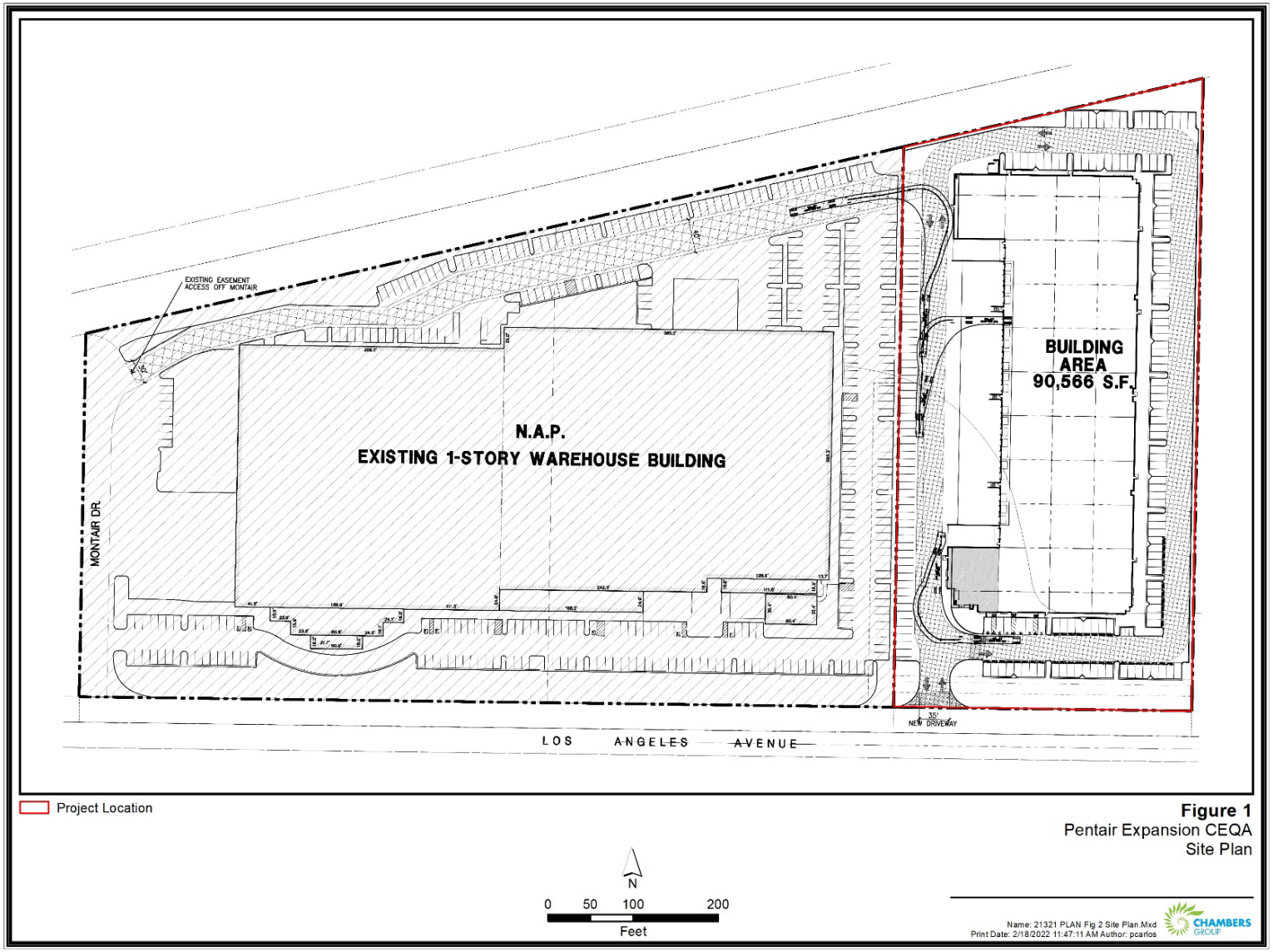


Figure 2. Project Site Plan



1.3 PROJECT DESCRIPTION

The Proposed Project is the development of a 90,566-square-foot industrial building for Pentair Pool Products. Of this total square footage, 3,000 square feet is planned for office space and 87,566 square feet for warehousing. Total coverage of the building will be 36.8 percent of the site, which is lower than the City's Floor Area Ratio (FAR) cap of 38 percent. The building is proposed to be a one-story building, approximately 44 feet in height, as a Type III-B concrete tilt-up structure.

The Applicant is proposing 21 truck-loading spaces with 3 grade-level doors. The proposed material for the building is staggered vertical concrete panel surfaces with glazing windows and painted with an alternating color scheme. The Project site will include 185 parking spaces, including 6 accessible stalls, 137 standard stalls, 19 electric vehicle (EV) stalls, and 23 clean air/van pool stalls. The site will also feature 20 bicycle racks and 3 motorcycle parking stalls. The parking and road surface will comprise approximately 38 percent of the site. The parking and road surfaces will be made up of asphalt, concrete (dock areas), and decorative paving at the entrance of the Project site. The site will also include onsite underground storm drain chambers for retention of rainwater.

The Applicant is proposing to landscape 16.9 percent of the total Project area. Landscaping will be provided throughout the Project site and will contain drought-tolerant plants including various trees, shrubs, and groundcover. The landscaped areas will be irrigated with an automatic irrigation system.

Lighting will be provided throughout the Project site as well. The Applicant is proposing 8 light poles throughout the parking lot areas and 18 wall pack light poles adjacent to the proposed building.

The portion of the existing Gabbert Canyon Channel under the site's proposed entry driveway will be replaced with a reinforced concrete box culvert, while the remainder of the channel will remain unchanged. The length of the culvert will be approximately 60 linear feet.

The Proposed Project will receive utility services from the County of Ventura Watershed Protection District, Ventura County Waterworks District 1, California Department of Transportation (Caltrans), Ventura County Public Works Water and Sanitation Department, Southern California Edison (SCE), and Southern California Gas Company.

1.3.1 Construction

Construction of the Project is expected to begin First Quarter of 2023 and concluded by the end of the Fourth Quarter of 2023. Construction activities of the Proposed Project will be scheduled in compliance with the City's Municipal Code Title 17 for the provisions of operating and permitting the use of tools and equipment during construction, drilling, repair, or alterations.

Construction activities occurring onsite will include grading, excavation, and recompaction throughout the site. Earthwork quantities will be approximately 11,307 cubic yards of cut and 11,307 cubic yards of fill, with cut and fill balanced on site. The Project will require no imported fill. Easements will be required from Caltrans and County of Ventura Watershed Protection District for the construction of the bridge over the Gabbert Canyon Channel, the culvert within the channel, and the connection to Los Angeles Avenue. Additionally, construction vehicles and heavy equipment will be used on site, which include an impact wrench, jackhammer, backhoe, cranes, bulldozer, graders, loader, paver, pneumatic tool, pump, air

compressor, concrete mixer, concrete vibrator, generator, compactors, roller, saw, scarified scraper, shovel, and dump trucks. All equipment will be staged within the Project site.

1.3.2 Operations

Pentair plans to start operation in the fourth Quarter of 2023. The primary use of the building will be the warehousing of pool equipment. The warehouse will operate 24 hours a day, Monday through Saturday. An estimated 12 trucks will deliver raw material to the warehouse between 7:00 a.m. and 7:00 p.m. and 6 trucks between 7:00 p.m. and 7:00 a.m. Packages will be stored in the warehouse for use in the assembly facility at the existing Pentair facility to the west. Material between the new building and existing building will be transported using electrically powered material handling tuggers at a rate of approximately 14 deliveries per hour, between the hours of 6:00 a.m. and 10:30 p.m. Pentair expects to employ initially 85 employees working in three shifts. The first shift would have approximately 50 employees from 6:00 a.m. to 2:30 p.m.; the second shift would have approximately 30 employees from 2:00 p.m. to 10:30 p.m.; and the last shift would have 5 workers from 10:00 p.m. to 6:30 a.m. The new project is not expected to have a significant impact to outbound truck shipments from the existing Pentair facility.

1.3.3 Permits

As required by the CEQA Guidelines, this section provides, to the extent the information is known, a list of permits and other approvals required to implement the Project.

The following approvals and permits may be required for the Project:

- City of Moorpark grading permits and building permits
- Caltrans easement for construction and direct access from Los Angeles Avenue
- Ventura County Fire Department building safety, secondary access, and hydrants
- County of Ventura Watershed Protection District easement for construction of a bridge over the channel and placement of a culvert within the channel
- Southern California Edison
- Ventura County Waterworks District No. 1
- Waste Management

SECTION 2.0 – ENVIRONMENTAL DETERMINATION

2.1 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would potentially be affected by this project, involving at least one impact that is a "Potentially Significant Impact," as indicated by the checklists on the following pages. For each of the potentially affected factors, mitigation measures are recommended that would reduce the impacts to less than significant levels.

☐ *Aesthetics*	☐ *Agriculture and Forestry Resources*	☐ *Air Quality*
☒ *Biological Resources*	☒ *Cultural Resources*	☐ *Energy*
☐ *Geology /Soils*	☐ *Greenhouse Gas Emissions*	☐ *Hazards & Hazardous Materials*
☐ *Hydrology /Water Quality*	☒ *Land Use / Planning*	☐ *Mineral Resources*
☐ *Noise*	☐ *Population / Housing*	☐ *Public Services*
☐ *Recreation*	☒ *Transportation*	☐ *Tribal Cultural Resources*
☐ *Utilities /Service Systems*	☐ *Wildfire*	☒ *Mandatory Findings of Significance*

2.2 DETERMINATION

On the basis of this initial evaluation:

1. I find that the project **could not** have a significant effect on the environment, and a **NEGATIVE DECLARATION** will be prepared. ☐
2. I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A **MITIGATED NEGATIVE DECLARATION** will be prepared. ☒
3. I find the proposed project **may have a significant effect** on the environment, and an **ENVIRONMENTAL IMPACT REPORT** is required. ☐
4. I find that the proposed project **may have a "potentially significant impact" or "potentially significant unless mitigated impact"** on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An **ENVIRONMENTAL IMPACT REPORT** is required, but it must analyze only the effects that remain to be addressed. ☐
5. I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or Negative Declaration pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or Negative Declaration, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required. ☐

Shanna Farley — Signature

7/18/2022 — Date

Shanna Farley — Name

Principal Planner — Title

SECTION 3.0 – EVALUATION OF ENVIRONMENTAL IMPACTS

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2. All answers must take account of the whole action involved, including offsite as well as onsite, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if substantial evidence exists that an effect may be significant. If one or more "Potentially Significant Impact" entries are marked when the determination is made, an EIR is required.

4. "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures and briefly explain how they reduce the effect to a less than significant level (mitigation measures from earlier analyses may be cross-referenced).

5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

    a. Earlier Analysis Used. Identify and state where they are available for review.

    b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

    c. Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8. The explanation of each issue should identify:

    a. the significance criteria or threshold, if any, used to evaluate each question; and

    b. the mitigation measure identified, if any, to reduce the impact to less than significant.

    *Note: Instructions may be omitted from final document.

SECTION 4.0 – CHECKLIST OF ENVIRONMENTAL ISSUES

4.1 AESTHETICS

1.	AESTHETICS. Except as provided in Public Resources Code Section 21099, would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
(b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
(c)	Substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
(d)	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

4.1.1 Impact Analysis

a) Would the project have a substantial adverse effect on a scenic vista?

Less Than Significant Impact. The Project site is located in the vicinity of a number of City-designated scenic corridors, including the Arroyo Simi creek, Los Angeles Avenue, Tierra Rejada, State Route 23 (SR-23, Moorpark Freeway) (City 1986). Los Angeles Avenue is located immediately adjacent to the site, Tierra Rejada Road is approximately 1.6 miles southeast, SR-23 is approximately 2.82 miles east, and the Arroyo Simi creek is approximately 0.75 mile south of the Project site. Dense development exists along Los Angeles Avenue and the Project site; however, the Project is not located within the existing Los Angeles Avenue scenic corridor (City 1986). The Project site is not located within the viewshed for any of the listed City scenic corridors and is surrounded by industrial development to the east and agricultural uses to the south. Thus, views of the Project would be consistent with existing industrial views in the area, as the Project consists of addition of a new warehouse. Additionally, none of the nearby parks or trail systems have designated scenic viewpoints overlooking the Project site; and the Project site is not located within any of the scenic viewsheds designated in the City's General Plan (City 1986). Therefore, the Project construction and operation would not have an adverse effect on a scenic vista, and impacts would be less than significant.

b) Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact. The Project is not located within a state scenic highway. No trees exist on site and no offsite trees are anticipated to be removed. No officially designated state scenic highways are in the vicinity of the Project site (Caltrans 2019). Further, construction of the Project would not damage rock

outcroppings or historic buildings, as neither are present at the Project site. No impacts to scenic resources within a state scenic highway would occur.

c) *Would the project Substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?*

Less Than Significant Impact. The Project site is located on the western edge of the Moorpark city boundary. The site is located immediately adjacent to the existing Pentair facility and surrounded by rural land uses. No scenic viewpoints are overlooking the Project site. The Project is located in an underdeveloped portion of the city and surrounded by unincorporated Ventura County. The Project would be consistent with all development and design standards dictated by the City's zoning and land use regulations for industrial development, in addition to the City's Landscape Design Standards and Guidelines (City 2012). Impacts would be less than significant.

d) *Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?*

Less Than Significant Impact. The Project would construct a warehouse facility with parking which would include safety lighting. The Project would also include new lighting for the new openings in the building shell that will be loading docks used during deliveries. All lighting would be constructed in compliance with the lighting regulations set forth in the City's Zoning Code, including using shielded lamps directed away from adjacent properties and streets; not exceeding 7 foot-candles on 95 percent or more of the grid points within the parking area; light poles not exceeding 25 feet in height; and curbed planters around all light poles (City 2020a). Compliance with these regulations would ensure that impacts associated with the Project's new parking lot lighting would be less than significant.

4.2 AGRICULTURE & FORESTRY RESOURCES

2.	**AGRICULTURE & FOREST RESOURCES. (In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:**	**Potentially Significant Impact**	**Less than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**

(a)	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use?	☐	☐	☐	☒
(b)	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
(c)	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
(d)	Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
(e)	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to nonagricultural use or the conversion of forest land to non-forest use?	☐	☐	☐	☒

4.2.1 Impact Analysis

a) Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use?

No Impact. Currently the land is zoned M-2 and designated by the General Plan as I-2, and therefore it has been designated for industrial uses by the City (City 2008, 2020b). According to the California Department of Conservation's Important Farmland Finder, the Project site does not encompass Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (DOC 2020a). No impact to farmland would occur.

b) Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. The Project site is zoned M-2 and designated I-2 in the City's General Plan (City 2008, 2020b). No land within the Project site is designated for agricultural uses. Moreover, a map of agricultural preserves produced for the County's 2040 General Plan Update shows no lands under Williamson Act contracts are within the Project site (County 2020a). No impact to land zoned for agricultural use would occur.

c) Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

No Impact. The Project site is zoned M-2 and designated I-2 in the City's General Plan, and no land is designated as forest land or timberland within the Project site (City 2008, 2020b). No impact to forest land would occur.

d) Would the project result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. The Project site is zoned M-2 and designated I-2 in the City's General Plan, and no land is designated as forest land or timberland within the Project site (City 2008, 2020b). No impact regarding conversion of forest land would occur.

e) *Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to nonagricultural use or the conversion of forest land to non-forest use?*

No Impact. The Project site is currently zoned M-2 and designated by the General Plan as I-2 and therefore has been designated for industrial uses by the City (City 2008, 2020b). The Project site does not encompass Prime Farmland, Unique Farmland, or Farmland of Statewide Importance and does not contain land currently under a Williamson Act contract (DOC 2020a; County 2020a). Further, no designated forest land is within the Project site. No impacts to conversion of farmland or forest land would occur.

4.3 AIR QUALITY

3.	AIR QUALITY. Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
(b)	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
(c)	Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
(d)	Result in other emissions (such as those leading to odors adversely affecting a substantial number of people?	☐	☐	☒	☐

4.3.1 Environmental Setting

The Proposed Project site is located in the southeastern portion of the County of Ventura, which is part of the South Central Coast Air Basin (Air Basin) that includes San Luis Obispo County, Santa Barbara County, and Ventura County. Air quality regulation is administered by the Ventura County Air Pollution Control District (VCAPCD). The VCAPCD implements the programs and regulations required by the federal and State Clean Air Acts.

Atmospheric Setting

Air quality is a function of both the rate and location of pollutant emissions under the influence of meteorological conditions and topographical features. Atmospheric conditions such as wind speed, wind direction, and air temperature gradients interact with physical features of the landscape to determine their movement and dispersal and, consequently, their effect on air quality.

The regional climate within the Air Basin is dominated by the intensity and location of the semi-permanent Pacific high-pressure zone, which, from spring to fall, induces regional subsidence and temperature inversion layers. The region is characterized by warm summers, mild winters, infrequent seasonal rainfall, and moderate humidity, with the predominate wind patterns following a diurnal land/sea breeze cycle with typical daytime winds from the west. The diurnal land/sea breeze pattern is a common occurrence in the Air Basin, and it recirculates air contaminants. Air pollutants are pushed toward the ocean during the early morning by the land breeze and toward the east during the afternoon by the sea breeze. This creates a "sloshing" effect, causing pollutants to remain in the area for several days. This pollutant "sloshing" effect happens most predominately from May through October, which is the "smog" season for the Air Basin.

Moorpark is located within southeastern Ventura County, which is part of the inland portion of the Oxnard Plain Airshed, approximately 18 miles from the coast of the Pacific Ocean. The city experiences a mild Mediterranean climate, typical of Southern California. Average temperatures for the Thousand Oaks 1 SW Monitoring Station (WRCC 2016), which is the nearest monitoring station with historical data, range from an average low of 43 degrees Fahrenheit (°F) in January to an average high of 86 °F in July. Rainfall averages approximately 10.49 inches a year.

Regulatory Setting

National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) have been established for the following criteria pollutants: carbon monoxide (CO), ozone, sulfur dioxide (SO_2), nitrogen dioxide (NO_2), inhalable particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), and lead. The CAAQS also set standards for sulfates, hydrogen sulfide, and visibility.

Both the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) utilize ambient air quality monitoring to designate areas according to their attainment status for criteria air pollutants. The three basic designation categories are nonattainment, attainment, and unclassified. A "nonattainment" designation signifies that the measured pollutant concentrations exceeded the established standards. An "attainment" designation signifies that pollutant concentration did not exceed the established standard. Finally, an "unclassified" designation indicates that insufficient data exists to determine attainment or nonattainment; however, "unclassified" is usually assumed to be "attainment," since if preliminary data found a potential for an exceedance to occur, more data would have been collected in order to determine if the pollutant meets the "nonattainment" designation.

As shown in Table 2, the VCAPCD has been designated by EPA for the national standards as a nonattainment area for ozone. Currently, the VCAPCD is in attainment with the national ambient air quality standards for PM_{10}, $PM_{2.5}$, CO, SO_2, and NO_2. The VCAPCD has been designated by the CARB as a nonattainment area for ozone and PM_{10}, as the CAAQS are more stringent than the national ambient air quality standards. The VCAPCD is required to adopt plans on a triennial basis that show progress toward meeting the State ozone and PM_{10} standards. The County is considered attainment or unclassified under State standards for all other pollutants.

Table 2: VCAPCD Attainment Designations

Pollutant	Federal Designations	State Designation
Ozone (O_3)	Nonattainment	Nonattainment
Respirable Particulate Matter (PM_{10})	Unclassified/Attainment	Nonattainment
Fine Particulate Matter ($PM_{2.5}$)	Unclassified/Attainment	Unclassified
Carbon Monoxide (CO)	Attainment	Attainment
Nitrogen Dioxide (NO_2)	Unclassified/Attainment	Attainment
Sulfur Dioxide (SO_2)	Unclassified/Attainment	Attainment
Lead	Attainment	Attainment
Particulate Sulfate	--[1]	Unclassified
Hydrogen Sulfide	--[1]	Unclassified
Visibility Reducing Particles	--[1]	Unclassified

[1] No Federal Standard

Source: http://www.vcapcd.org/air_quality_standards.htm

Monitored Air Quality

The air quality at any site is dependent on the regional air quality and local pollutant sources. Regional air quality is determined by the release of pollutants throughout the Air Basin. The air quality of Ventura County is monitored by a network of air monitoring stations operated by CARB and VCAPCD. Since not all air monitoring stations measure all of the tracked pollutants, the data from the following two monitoring stations, listed in the order of proximity to the Project site, have been used: Thousand Oaks – Moorpark Street Monitoring Station (Thousand Oaks Station) and Simi Valley-Cochran Street Monitoring Station (Simi Valley Station).

The Thousand Oaks Station is located approximately 5.2 miles south of the Project site at 2323 Moorpark Road, Thousand Oaks; and the Simi Valley Station is located approximately 12.9 miles east of the Project site at 5400 Cochran Street, Simi Valley. The monitoring data presented in Table 3 shows the most recent three years of monitoring data from CARB. Ozone and $PM_{2.5}$ were measured at the Thousand Oaks Station, and PM_{10} and NO_2 were measured at the Simi Valley Station.

Table 3: Ambient Air Quality Monitoring Summary

Air Pollutant	2018	2019	2020
Ozone[1]			
Max 1 Hour (ppm)	0.080	0.103	0.097
Days > CAAQS (0.09 ppm)	0	0	1
Max 8 Hour (ppm)	0.073	0.074	0.084
Days > NAAQS (0.070 ppm)	1	1	7
Days > CAAQS (0.070 ppm)	1	2	7
Nitrogen Dioxide (NO_2)[2]			
Max 1 Hour (ppb)	75.6	89.5	85.3
Days > NAAQS (100 ppb)	67	68	67

Table 3: Ambient Air Quality Monitoring Summary

Air Pollutant	2018	2019	2020
Days > CAAQS (180 ppb)	90	90	90
Particulate Matter (PM_{10})[2]			
Max Daily California Measurement	336.0	141.9	145.2
Days > NAAQS (150 µg/m^3)	2	0	0
Days > CAAQS (50 µg/m^3)	14	4	2
National Average (20 µg/m^3)	34.8	28.5	31.6
Particulate Matter ($PM_{2.5}$) [1]			
Max Daily National Measurement	41.5	24.5	36.3
Days > NAAQS (35 µg/m^3)	1	0	1
National Average (12 µg/m^3)	9.2	7.2	7.4
State Average (12 µg/m^3)	9.2	7.2	7.5

Abbreviations:
> = exceed ppm = parts per million ppb = parts per billion µg/m^3 = micrograms per cubic meter
CAAQS = California Ambient Air Quality Standard NAAQS = National Ambient Air Quality
ND = Insufficient or No Data **Bold** = exceedance
[1] Measurements taken from Thousand Oaks Station
[2] Measurements taken from Simi Valley Station
Source: http://www.arb.ca.gov/adam/

California Emissions Estimator Model™ Employed To Estimate AQ Emissions

In May 2021, the California Air Pollution Control Officers Association (CAPCOA), the South Coast Air Quality Management District (SCAQMD), and other California air districts released the latest version of the California Emissions Estimator Model™ (CalEEMod) v2020.4.0. The purpose of this model is to more accurately calculate construction-source and operational-source criteria pollutants (nitrogen oxides [NOx], volatile organic compounds [VOCs], PM_{10}, $PM_{2.5}$, sulfur oxide [SOx], and CO) and greenhouse gas (GHG) emissions from direct and indirect sources and quantify applicable air quality and GHG reductions achieved from mitigation measures. Accordingly, the latest version of CalEEMod has been used for this Proposed Project to determine construction and operational impacts related to the Proposed Project. Outputs from the model runs are provided in Appendix A.

4.3.2 Impact Analysis

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

Less Than Significant Impact. The Proposed Project would not conflict with or obstruct implementation of the Ventura County Air Quality Management Plans (AQMPs). The Ventura County Air Quality Assessment Guidelines (VCAPCD 2003) provides procedures for determining a project's consistency with the AQMP. According to the VCAPCD Guidelines, a project is consistent with the growth projections provided in the AQMPs if the proposed project conforms to the applicable General Plan land use designations and if the projected population growth created by the proposed project is within the population forecasts developed by the Ventura Council of Governments for the project

area. For this project, the City of Moorpark General Plan's Land Use Plan defines the long-range land use assumptions that are represented in the AQMPs.

The Project site is currently designated as I-2 in the General Plan and is zoned M-2. The proposed industrial building is an allowed use in the Medium Industrial land use designation. As such, the Proposed Project is consistent with the current land use designation and is not anticipated to exceed the AQMP assumptions for the Project site. Projects that would result in population growth are limited to residential projects. Since the Proposed Project consists of an industrial building, implementation of the Proposed Project would not result in any population growth in Ventura County. It should also be noted that the Project would provide employment opportunities in an area where there is more housing than jobs. As such, development of the Proposed Project would assist in implementation of the AQMP by potentially reducing vehicle miles traveled. Based on the discussion above, the Proposed Project will not result in an inconsistency with the AQMP. Accordingly, the Proposed Project would not conflict with or obstruct implementation of the applicable air quality plan.

b) *Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?*

Less Than Significant Impact. The Proposed Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard. As shown in Table 2, the Proposed Project area is designated as a federal and/or State nonattainment area for ozone and PM_{10}. To estimate if the Proposed Project may adversely affect the air quality in the region, the VCAPCD has prepared the VCAPCD Guidelines that details that a proposed project's criteria pollutant emissions would be considered significant if a project would generate daily operational emissions exceeding 25 pounds of reactive organic gas (ROG) or NOx. These thresholds are not intended to be applied to construction emissions since such emissions are temporary.

The VCAPCD has not established quantitative thresholds for particulate matter for either operation or construction. However, the VCAPCD indicates that a project that may generate fugitive dust emissions in such quantities as to cause injury, detriment, nuisance, or annoyance to any considerable number of persons, or which may endanger the comfort, repose, health, or safety of any such person, or which may cause or have a natural tendency to cause injury or damage to business or property would have a significant air quality impact. This threshold is particularly applicable to the generation of fugitive dust during construction grading operations. To determine whether a regional air quality impact would occur, the project-generated emissions are compared to the VCAPCD's recommended thresholds for operational emissions.

Construction Emissions

Construction of the Proposed Project would create air emissions primarily from equipment exhaust and fugitive dust. The air emissions from the Proposed Project were analyzed through use of the CalEEMod model (see Appendix A). Construction activities for the Proposed Project are anticipated to start in the First Quarter 2023 and conclude by the end of the Fourth Quarter of 2023. The construction activities would include site preparation and grading of the Project site, building construction, paving, and application of architectural coatings.

Table 4 shows the maximum summer or winter daily emissions that would be created from construction of the Proposed Project based on the default construction equipment assumptions provided by the CalEEMod model.

Table 4: Construction-Related Maximum Daily Criteria Pollutant Emissions

Construction Season	Pollutant Emissions (Pounds/Day)			
	VOC	NOx	PM_{10}	$PM_{2.5}$
Summer	44.59	27.56	21.07	11.31
Winter	44.62	27.56	21.07	11.31

Source: CalEEMod Version 2020.4.0.

As detailed in the VCAPCD Guidelines, the VCAPCD has not established quantitative thresholds for particulate matter (PM_{10} and $PM_{2.5}$); and the 25-pound-per-day threshold for ROG and NOx does not apply to construction emissions since the emissions are temporary. However, the VCAPCD indicates that a project that may generate fugitive dust emissions in such quantities as to cause injury, detriment, nuisance, or annoyance to any considerable number of persons, or which may endanger the comfort, repose, health, or safety of any such person, or which may cause or have a natural tendency to cause injury or damage to business or property would have a significant air quality impact.

In order to reduce air quality impacts from construction activities, the VCAPCD requires that all projects minimize construction emissions through adherence to the VCAPCD Rule 55 fugitive dust control measures and minimize ROG through adherence to the VCAPCD Rule 74.2 architectural coating VOC content limits. Compliance with VCAPCD Rules 55 and 74.2 would ensure that construction emissions would not be generated in such quantities as to cause injury, detriment, nuisance, or annoyance to any considerable number of persons or that may endanger the comfort, repose, health or safety of any such person or the public. Therefore, a less than significant air quality impact would occur from construction of the Proposed Project.

Operational Emissions

The Proposed Project consists of the development and operation of an industrial warehouse that may generate air emissions from mobile sources that are created from vehicular emissions, area sources, and energy usage. Table 5 shows the estimated worst-case summer or winter daily emissions from operation of the Proposed Project.

Table 5: Operations-Related Maximum Daily Criteria Pollutant Emissions

Activity	Pollutant Emissions in pounds/day					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Area Sources[1]	2.08	<0.01	<0.01	<0.01	<0.01	<0.01
Energy Usage[2]	0.01	0.09	0.08	<0.01	<0.01	<0.01
Mobile Sources (Summer)[3]	0.63	0.68	5.55	0.01	1.21	0.33
Mobile Sources (Winter)[3]	0.61	0.76	5.87	0.01	1.21	0.33
Total Worst-Case Project Emissions[4]	**2.72**	**0.85**	**5.95**	**0.01**	**1.22**	**0.34**
VCAPCD Thresholds	**25**	**25**	**--[4]**	**--[4]**	**--[4]**	**--[4]**
Exceed Thresholds?	No	No	--	--	--	--

Notes:
[1] Area sources consist of emissions from consumer products, architectural coatings, and landscape equipment.
[2] Energy usage consists of emissions from onsite natural gas usage.
[3] Mobile sources consist of emissions from vehicles and road dust.
[4] Based on worst-case between summer and winter mobile source emissions.
Source: CalEEMod Version 2020.4.0.

As shown in Table 5, operations-related emissions would not exceed the VCAPCD threshold for ROG and NOx. Therefore, a less than significant air quality impact would occur from operation of the Proposed Project.

Accordingly, the Proposed Project would not result in a cumulative considerable net increase of any criteria pollutant.

c) *Would the project expose sensitive receptors to substantial pollutant concentrations?*

Less Than Significant Impact. The Proposed Project has the potential to expose nearby sensitive receptors to criteria pollutants, including CO hotspots, fugitive dust, toxic air contaminants (TACs), and San Joaquin Fever. The nearest sensitive receptors are single-family homes adjacent to the west and east sides of the Project site.

CO "Hot Spot" Analysis

CO is the pollutant of major concern along roadways because the most notable source of CO is motor vehicles. For this reason, CO concentrations are usually indicative of the local air quality generated by a roadway network and are used as an indicator of potential impacts to sensitive receptors. According to the VCAPCD Guidelines, a CO screening analysis should be conducted for intersections that would be significantly affected by a project and that experience, or are anticipated to experience, level of service (LOS) E or F. "Hot spots" are defined as locations where local ambient CO concentrations exceed the State or federal ambient air quality standards.

The Traffic Study (Stantec 2022; Appendix K) analyzed 12 intersections in the vicinity of the Project site and found that only two intersections would operate at LOS E or F, which included Los Angeles Avenue and Montair Drive and Los Angeles Avenue and SR-23 Southbound Ramps. The Traffic Study

included mitigation for the Proposed Project that included a new traffic signal at the intersection of Los Angeles Avenue and Montair Drive, which would improve the LOS to LOS D or higher for all scenarios. For the Los Angeles Avenue and SR-23 Southbound Ramps intersection, the Traffic Study found that the Proposed Project would contribute less than 0.001 to the volume to capacity ratio. It should also be noted that the nearest sensitive receptor to this intersection is located 0.3 mile to the northeast. As such, due to the distance to the nearest sensitive receptor and nominal project contribution to the delay at this intersection, the Proposed Project is not anticipated to created a CO "hot spot" at this intersection. Therefore, a less than significant impact is anticipated to sensitive receptors from potential CO hotspots.

Fugitive Dust Emissions

Construction activities are a source of fugitive dust (PM_{10} and $PM_{2.5}$) emissions that may have a substantial, although temporary, impact on local air quality. In addition, fugitive dust may be a nuisance to those living and working in the immediate vicinity of the proposed construction activities. Fugitive dust emissions from the Proposed Project would be created during onsite earth-moving activities. The anticipated onsite worst-case PM_{10} emissions for each phase of construction have been provided in Table 5. However, it should be noted that fugitive dust emissions vary substantially from day to day, depending on the level and type of activity and weather conditions. Additionally, most of the PM_{10} emissions from onsite construction activities are from inert silicates rather than the complex organic particles released from combustion sources, which are more harmful to health.

Construction activities associated with the Proposed Project would be required to implement emissions control measures detailed in VCAPCD Rule 55 fugitive dust control measures. With implementation of VCAPCD's Rule 55, the Proposed Project would not exceed the VCAPCD standards for fugitive dust. Fugitive dust emissions would be less than significant for construction activities, and no fugitive dust emissions are anticipated to occur from operational activities.

Construction-Related TAC Emissions

Construction of the Proposed Project would generate TAC emissions from the onsite operation of diesel-powered equipment in the form of diesel particulate matter (DPM). Given the relatively limited number of heavy-duty construction equipment, the varying distances to the nearby sensitive receptors that construction equipment would operate, and the short-term construction schedule, the Proposed Project would not result in a long-term (i.e., 70 years) substantial source of toxic air contaminant emissions and corresponding individual cancer risk. In addition, CCR Title 13, Article 4.8, Chapter 9, Section 2449 regulates emissions from off-road diesel equipment in California. This regulation limits idling of equipment to no more than five minutes and requires equipment operators to label each piece of equipment and provide annual reports to CARB of their fleet's usage and emissions. This regulation also requires systematic upgrading of the emission Tier level of each fleet; currently, no commercial operator is allowed to purchase Tier 0 or Tier 1 equipment; and by January 2023 no commercial operator is allowed to purchase Tier 2 equipment. In addition to the purchase restrictions, equipment operators need to meet fleet average emissions targets that become more stringent each year between years 2014 and 2023. Therefore, less-than-significant short-term toxic air contaminant impacts would occur during construction of the Proposed Project.

Operations-Related TAC Emissions

Particulate matter (PM) from diesel exhaust is the predominant TAC in most areas; and, according to *The California Almanac of Emissions and Air Quality 2013 Edition* prepared by CARB, about 80 percent of the outdoor TAC cancer risk is from diesel exhaust. Some chemicals in diesel exhaust, such as benzene and formaldehyde, have been listed as carcinogens by State Proposition 65 and the Federal Hazardous Air Pollutants program.

According to the Project Description (Section 1.3.2 Operations), the Proposed Project would generate 12 truck deliveries between 7:00 a.m. and 7:00 p.m. and 6 truck deliveries between 7:00 p.m. and 7:00 a.m., or approximately 18 truck deliveries per day. According to the Health Risk Assessments for Proposed Land Use Projects prepared by CAPCOA, July 2009, a truck distribution facility that accommodates 100 or more truck deliveries per day has the potential to create significant health risks from TAC emissions. Since the Proposed Project would generate less than a fifth of the truck deliveries that CAPCOA found would have the potential to create significant health risks, a less than significant TAC impact would occur during the on-going operations of the Proposed Project; and no mitigation would be required.

San Joaquin Valley Fever

San Joaquin Valley Fever, or coccidioidomycosis, is an infection caused by inhalation of the spores of the fungus *Coccidioides immitis*. The spores live in soil and can live for an extended time in harsh environmental conditions. Activities or conditions that increase the amount of fugitive dust contribute to greater exposure and include dust storms, grading, and recreational off-road activities.

The Proposed Project would have the potential to disturb the soil during construction activities. However, the Project site is located in a developed area; and most of the Project site is currently developed. As such, the Project site does not meet any of the potential conditions detailed in the VCAPCD Guidelines of sites that are likely to contain San Joaquin Valley Fever. In addition, construction activities will be required to adhere to the VCAPCD Rule 55 fugitive dust control measures that will minimize the generation of fugitive dust that contributes to the exposure of persons to San Joaquin Valley Fever. Therefore, impacts to San Joaquin Valley Fever would be less than significant.

Therefore, implementation of the Proposed Project would not expose sensitive receptors to substantial pollutant concentrations; and impacts would be less than significant.

d) *Would the project result in other emissions (such as those leading to odors adversely affecting a substantial number of people?*

Less Than Significant Impact. Potential sources that may emit odors during construction activities include the application of coatings such as asphalt pavement, paints, and solvents and from emissions from diesel equipment. The objectionable odors that may be produced during the construction process would be temporary and would not likely be noticeable for extended periods of time beyond the Project site's boundaries. Due to the transitory nature of construction odors, a less than significant construction-related odor impact would occur; and no mitigation would be required.

The Proposed Project would consist of the development of an industrial building. Potential sources that may emit odors during the ongoing operations of the Proposed Project would primarily occur from odor emissions from the trash storage areas. Pursuant to City regulations, permanent trash enclosures that protect trash bins from rain as well as limit air circulation would be required for the trash storage areas. Due to the distance of the nearest receptors from the Project site and through compliance with City regulations, no significant impact related to odors would occur during the ongoing operations of the Proposed Project. Therefore, a less than significant odor impact would occur; and no mitigation would be required.

Therefore, construction and operation of the Proposed Project would not create objectionable odors affecting a substantial number of people; and impacts would be less than significant.

4.4 BIOLOGICAL RESOURCES

4.	BIOLOGICAL RESOURCES. Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
(b)	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
(c)	Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
(d)	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
(e)	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
(f)	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

4.4.1 Environmental Setting

Chambers Group, Inc.'s (Chambers Group's) biologists Heather Clayton and Jessica Calvillo performed a site visit on December 16, 2021. The Project site is in an undeveloped lot adjacent to the existing Pentair

facility. The Project site is bounded by Southern California Regional Rail Authority (SCRRA) tracks to the north, open land to the east and south, and industrial buildings to the west. The site was surveyed for potential habitat for special status wildlife species. The findings of this investigation are outlined below. The results of this report are provided as Appendix B.

4.4.2 Impact Analysis

a) *Would the project have a substantial adverse effect, either directly or through habitat modification, on any species identified as candidate, sensitive or special status species in local or regional plans, policies or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?*

Less Than Significant Impact with Mitigation. The Project consists of a new warehouse, parking facilities, landscaping, and access road including placement of a culvert in Gabbert Channel. The Project site has two vegetation communities on site including disturbed land and developed land. A search of the California Natural Diversity Database (CNDDB) identified 38 special status species with potential to occur within the Project site; however, none of the species were found on site, and necessary habitat does not occur on site. Therefore, all potential special status plant and animal species are considered absent from the survey area. However, nesting species covered by the Migratory Bird Act have potential to be found on site during nesting season (February to August). Implementation of mitigation measure BIO-1 would reduce impacts to a level less than significant.

MM-BIO-1: A nesting bird pre-construction survey will be conducted by a Qualified Biologist and submitted to the City three days prior to demolition and/or vegetation removal activities during nesting bird season (February 15 through August 31). Should nesting birds be found, an exclusionary buffer will be established by a Qualified Biologist. The buffer may be up to 500 feet in diameter depending on the species of nesting bird found. This buffer will be clearly marked in the field by construction personnel under guidance of the Qualified Biologist, and construction or clearing will not be conducted within this zone until the Qualified Biologist determines that the young have fledged or the nest is no longer active. Nesting bird habitat within the Project site will be resurveyed during bird breeding season if a lapse in construction activities lasts longer than seven days.

b) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Less Than Significant Impact. The Project site includes disturbed and developed vegetation communities, as identified during the biological reconnaissance survey. A cement-lined channel flows through the southern portion of the Project site and eventually connects to the Arroyo Simi and terminates in the Pacific Ocean, a Traditional Navigable Water (TNW). Proposed construction includes the placement of an access road over Gabbert Channel and improvements to approximately 60 feet of the channel within the same section. A total of 0.02 acre of permanent impacts to waters of the State will occur as a result of the Project; thus, a State 401 certification and/or CDFW State Streambed Alteration Agreement may be required for Project authorization. With proper permits and authorization, impacts to riparian habitat or other sensitive natural communities would be less than significant.

c) *Would the project have a substantial adverse effect on state or federally protected wetlands (including but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?*

Less Than Significant Impact. Proposed construction includes the placement of an access road over the channel and improvements to approximately 60 feet of the channel within the same section. According to the USFWS's National Wetlands Inventory, no riparian habitat occurs within the Project site boundary (USFWS 2022). As discussed in b), a total of 0.02 acre of permanent impacts to waters of the State will occur as a result of the Project; thus, a State 401 certification, and/or CDFW State Streambed Alteration Agreement may be required for Project authorization. In addition, to prevent offsite impacts to nearby wetlands resulting from stormwater runoff, the Project would be required to obtain coverage under a Construction General Permit to comply with National Pollutant Discharge Elimination System (NPDES) requirements. Compliance with the Construction General Permit would require the development and implementation of a Stormwater Pollution Prevent Plan (SWPPP) and associated Best Management Practices (BMPs). The BMPs would include measures that would be implemented to prevent discharges into adjacent wetland from the Project site during construction activities. A less than significant impact to wetlands would occur as a result of the Project.

d) *Would the project Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?*

Less Than Significant Impact. The Project is located approximately 0.7 mile north of Arroyo Simi, which may provide a means of movement and migration as well as a nursery for fish species in the area. However, all construction and operational activities associated with the Project would remain entirely within the Project site boundary; and no direct impacts to the Arroyo Simi would occur. Additionally, outlets from the cement-lined channel will follow existing drainage patterns and outlet to the Arroyo Simi creek; but the Project would not impede flow of the Arroyo Simi creek. No other potential wildlife corridors have been identified in the Project vicinity. Impacts would be less than significant.

e) *Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

No Impact. According to the City's Municipal Code Chapter 12.12 Historic Trees, Native Oak Trees, and Mature Trees, tree removal permits are required to remove, cut down, or destroy a native oak tree, historic tree, or other mature tree. Prior to issuance of a tree removal permit, a site inspection and tree appraisal must be performed (City 2022). The site is vacant and no trees would require removal. Therefore, no impact would occur.

f) *Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservancy Conservation Plan, or other approved local, regional, or state habitat conservation plan?*

No Impact. The Project site is not located in an area subject to an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved conservation plans. Therefore, no impact would occur.

4.5 CULTURAL RESOURCES

5.	CULTURAL RESOURCES. Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☐	☒	☐
(b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
(c)	Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

4.5.1 Environmental Setting

A Cultural Resource records search, literature review, and pedestrian survey was prepared for the Proposed Project by Chambers Group, Inc. (Chambers Group) in March 2022 (Appendix C) which included results from a records search conducted by the South Coast Central Information Center (SCCIC), literature review, and pedestrian survey. Additionally, Chambers Group prepared a Paleontological Records Search and Literature Review Summary. A desktop survey and records search was requested by the Natural History Museum of Los Angeles County. Results from this analysis have been summarized and incorporated below.

4.5.2 Impact Analysis

a) Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?

Less Than Significant Impact. As a result of the records search review and archival research, no previously recorded resources or any other listed or potentially significant properties are located within the Project site. However, one listed resource does occur outside the Project site but within the 1-mile study area. The former Southern Pacific Coast rail line (now Union Pacific/Amtrak/Metrolink alignment) is located within the 1-mile boundary and substantially contributed to the early development of Moorpark. Review of available historic photographs and aerial imagery showed that the Project site has been open space with evidence of sporadic agricultural use and no built environment features visible from 1947 to 2018 (Appendix C). In addition, while the Gabbert Channel is of historic age, no channels within Ventura County have been designated as a historic resource, nor are any channels considered eligible for historic or landmark designation (VCRMA 2022). Since the potential to encounter historic resources is low, the potential for discovery remains; and implementation of Mitigation Measure CUL-1 would reduce impacts are considered less than significant.

b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Less Than Significant Impact with Mitigation. As noted above, as a result of the records search review and archival research, no previously recorded resources or any other listed or potentially significant properties are located within the Project site. Due to the area having historic open space and agricultural uses, ground-disturbing activities or major excavation completed on site were likely to have been minimal (Appendix C). Therefore, the nature of the previous disturbance may allow for intact native soils and geologic formations to be impacted by the current Proposed Project construction and increases the risk of encountering intact buried cultural resources. Due to the potential for encountering archaeological resources, mitigation measures MM CUL-1 and MM CUL-2 would be implemented to reduce potential impacts to a less than significant level.

MM CUL-1 Prior to issuance of grading permits, the Applicant shall be required to obtain the services of a qualified project archaeologist to remain on call for the duration of the proposed ground-disturbing construction activity. The archaeologist selected must be approved in writing by the Community Development Director. Prior to construction commencing, all construction personnel associated with earth-moving equipment, drilling, grading, or excavating shall be provided with basic training. The training shall be completed by the Applicant-retained project archaeologist and shall include written notification of the restrictions regarding disturbance and/or removal of any portion of archaeological deposits and the procedures to follow should a potential resource be identified during construction activity. The construction contractor, or its designee, shall be responsible for implementation of this measure. A tribal monitor shall be provided an opportunity to attend the pre-construction briefing, if requested. The project archaeologist shall be on call and available to contact in the event of any unanticipated discovery of archaeological or historical resources during the proposed construction activity. If any archeological or historical resources are uncovered during grading or excavation operations, all grading or excavation shall immediately cease in the immediate area, a 50-foot buffer area around the discovery shall be cordoned off, and the discovery must be left untouched. The Applicant, in consultation with the project archaeologist, shall assure the preservation of the resource and immediately contact the Community Development Director by phone, in writing by email, or hand-delivered correspondence informing the Director of the find. In the absence of the Director, the Applicant shall so inform the City Manager. Additionally, all consulting Native American Tribal groups that requested notification of any unanticipated discovery of archaeological resources on the Project shall be notified appropriately. The Applicant-retained project archaeologist shall provide an assessment regarding the sensitivity of the discovery and, if avoidance is not feasible, recommend the appropriate treatment and/or recovery procedures for discovery. The Applicant shall pay for all costs associated with the investigation and, if required, the treatment and/or recovery of the discovery.

MM CUL-2 At the completion of all ground-disturbing activities, the project archaeologist shall prepare an Archaeological Resources Monitoring Report summarizing all monitoring efforts and observations, as performed, and any and all prehistoric or historic archaeological finds as well as providing follow-up reports of any finds to the South-Central Coastal Information Center (SCCIC), as required.

c) Would the project disturb any human remains, including those interred outside of formal cemeteries?

Less than Significant Impact. The Proposed Project involves expansion of the existing Pentair facility on an undeveloped site with previous agricultural uses. While discovery of human remains is unlikely, the City would require compliance with the following Condition of Approval to ensure less than significant impacts on human remains.

CA-1 Inadvertent Discovery of Human Remains. The inadvertent discovery of human remains is always a possibility during ground disturbances; State of California Health and Safety Code Section 7050.5 addresses these findings. This code section states that in the event human remains are uncovered, no further disturbance shall occur until the County Coroner has determined the origin and disposition of the remains pursuant to California Public Resources Code Section 5097.98. The Coroner must be notified of the find immediately, together with the City and the property owner. If the human remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). The MLD shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials and an appropriate reinterment site.

4.6 ENERGY

6.	ENERGY Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
(b)	Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

4.6.1 Environmental Setting

Energy conservation management in the state was initiated by the 1974 Warren-Alquist State Energy Resources Conservation and Development Act that created the California Energy Resource Conservation and Development Commission (currently named California Energy Commission [CEC]), which was originally tasked with certifying new electric generating plants based on the need for the plant and the suitability of the site of the plant. In 1976 the Warren-Alquist Act was expanded to include new restrictions on nuclear generating plants that effectively resulted in a moratorium of any new nuclear generating plants in the state. The following lists specific regulations adopted by the State in order to reduce the consumption of energy.

a) CCR Title 20 – Regulations for appliance efficiency standards

b) CCR Title 24 Part 6 – Energy efficiency standards for residential and nonresidential buildings

c) CCR Title 24 Part 11 – CALGreen Building Standards

d) Senate Bill (SB) 100 – Regulations for retail sales of electricity

e) Executive Order (EO) N-79-20 – Requires all new passenger vehicles and trucks to be zero-emission by the year 2035

f) Assembly Bill (AB) 1109 – Requires the use of high-efficiency lighting in new structures

4.6.2 Impact Analysis

Would the project

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less Than Significant Impact. The Project would impact energy resources during construction and operation, but these impacts would be less than significant. Energy resources that would potentially be impacted include electricity, natural gas, and petroleum-based fuel supplies and distribution systems. This analysis includes a discussion of the potential energy impacts of the Project with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy. A general definition of each of these energy resources is provided below.

Electricity, a consumptive utility, is a man-made resource. The production of electricity requires the consumption or conversion of energy resources, including water, wind, oil, gas, coal, solar, geothermal, and nuclear resources, into energy. The delivery of electricity involves a number of system components, including substations and transformers that lower transmission line power (voltage) to a level appropriate for onsite distribution and use. The electricity generated is distributed through a network of transmission and distribution lines commonly called a power grid. Conveyance of electricity through transmission lines is typically responsive to market demands. In 2020, Ventura County consumed 5,462 gigawatt-hours (GWh) per year of electricity (CEC 2021).

Natural gas is a combustible mixture of simple hydrocarbon compounds (primarily methane) that is used as a fuel source. Natural gas consumed in California is obtained from naturally occurring reservoirs, mainly located outside the state and delivered through high-pressure transmission pipelines. The natural gas transportation system is a nationwide network; and, therefore, resource availability is typically not an issue. Natural gas satisfies almost one-third of the state's total energy requirements and is used in electricity generation, space heating, cooking, water heating, industrial processes, and as a transportation fuel. Natural gas is measured in terms of cubic feet. In 2020, Ventura County consumed 180.18 Million Therms of natural gas.

Petroleum-based fuels currently account for a majority of the California's transportation energy sources and primarily consist of diesel and gasoline types of fuels. However, the state has been working on developing strategies to reduce petroleum use. Over the last decade California has implemented several policies, rules, and regulations to improve vehicle efficiency, increase the development and use of alternative fuels, reduce air pollutants and GHG emissions from the transportation sector, and reduce vehicle miles traveled (VMT). Accordingly, petroleum-based fuel consumption in California has declined. According to the CEC, in 2017, 338 million gallons of gasoline and 36 million gallons of diesel were sold in Ventura County (CEC 2018).

The following section calculates the potential energy consumption associated with the construction and operations of the Proposed Project and provides a determination of whether any energy utilized by the Project is wasteful, inefficient, or unnecessary consumption of energy resources.

Construction Energy

The Project would consume energy resources during construction in three general forms:

1. Petroleum-based fuels used to power off-road construction vehicles and equipment on the Project site, construction worker travel to and from the Project site, as well as delivery and haul truck trips (e.g., hauling demolition material to offsite reuse and disposal facilities)

2. Electricity associated with the conveyance of water that would be used during Project construction for dust control (supply and conveyance) and electricity to power any necessary lighting during construction, electronic equipment, or other construction activities necessitating electrical power

3. Energy used in the production of construction materials, such as asphalt, steel, concrete, pipes, and manufactured or processed materials such as lumber and glass

Construction-Related Electricity

During construction the Project would consume electricity to construct the new structure and infrastructure. Electricity would be supplied to the Project site by SCE and would be obtained from the existing electrical lines on the Project site. The use of electricity from existing power lines rather than temporary diesel or gasoline-powered generators would minimize impacts on fuel consumption. Electricity consumed during Project construction would vary throughout the construction period based on the construction activities being performed. Various construction activities include electricity associated with the conveyance of water that would be used during Project construction for dust control (supply and conveyance) and electricity to power any necessary lighting during construction, electronic equipment, or other construction activities necessitating electrical power. Such electricity demand would be temporary and nominal and would cease upon the completion of construction. Overall, construction activities associated with the Proposed Project would require limited electricity consumption that would not be expected to have an adverse impact on available electricity supplies and infrastructure. Therefore, the use of electricity during Project construction would not be wasteful, inefficient, or unnecessary.

Since the Project site already has existing electrical power service, it is anticipated that only nominal improvements to SCE distribution lines and equipment would be required with development of the Proposed Project. Compliance with the City's guidelines and requirements would ensure that the Project fulfills its responsibilities relative to infrastructure installation, coordinates any electrical infrastructure removals or relocations, and limits any impacts associated with construction of the Project. Construction of the Project's electrical infrastructure is not anticipated to adversely affect the electrical infrastructure serving the surrounding uses or utility system capacity.

Construction-Related Petroleum Fuel Use

Petroleum-based fuel usage represents the highest amount of transportation energy potentially consumed during construction, which would be utilized by both off-road equipment operating on the Project site and on-road automobiles transporting workers to and from the Project site and on-road trucks transporting equipment and supplies to the Project site.

The off-road construction equipment fuel usage was calculated through use of the off-road equipment assumptions and fuel use assumptions provided in Appendix D, which found that the off-road equipment utilized during construction of the Project would consume 37,226 gallons of fuel. The on-road construction trips fuel usage was calculated through use of the construction vehicle trip assumptions and fuel use assumptions provided in Appendix D, which found that the on-road trips generated from construction of the Project would consume 14,806 gallons of fuel. As such, the combined fuel used from off-road construction equipment and on-road construction trips for the Project would result in the consumption of 52,032 gallons of petroleum fuel. This equates to 0.01 percent of the gasoline and diesel consumed annually in Ventura County. As such, the construction-related petroleum use would be nominal when compared to current county-wide petroleum usage rates. Therefore, construction-related petroleum fuel use would be less than significant.

Construction activities associated with the Project would be required to adhere to all State and County regulations for off-road equipment and on-road trucks, which provide minimum fuel efficiency standards. As such, construction activities for the Proposed Project would not result in the wasteful, inefficient, and unnecessary consumption of energy resources. Impacts regarding transportation energy would be less than significant. Development of the Project would not result in the need to manufacture construction materials or create new building material facilities specifically to supply the Project. It is difficult to measure the energy used in the production of construction materials such as asphalt, steel, and concrete; therefore, it is reasonable to assume that the production of building materials such as concrete, steel, etc., would employ all reasonable energy conservation practices in the interest of minimizing the cost of doing business.

Operational Energy

The ongoing operation of the Proposed Project would require the use of energy resources for multiple purposes including, but not limited to, pumps and other mechanical industrial equipment, heating/ventilating/air conditioning (HVAC), refrigeration, lighting, appliances, and electronics. Energy would also be consumed during operations related to water usage, solid waste disposal, landscape equipment, and vehicle trips. All of these sources of energy usage can be categorized into the three general forms of electricity, natural gas and petroleum fuel use, which have been analyzed separately below.

Operations-Related Electricity

Operation of the Project would result in consumption of electricity at the Project site. According to the CalEEMod model printouts (see Appendix D), the Proposed Project would consume 430,019 kilowatt-hours per year of electricity. This equates to 0.008 percent of the electricity consumed annually in Ventura County. As such, the operations-related electricity use would be nominal when compared to current electricity usage in the County.

It should be noted that the Proposed Project would comply with all federal, State, and County requirements related to the consumption of electricity, which includes CCR Title 24, Part 6 Building Energy Efficiency Standards and CCR Title 24, Part 11: California Green Building Standards. The CCR Title 24, Part 6 and Part 11 standards require numerous energy efficiency measures to be incorporated into the proposed warehouse, including enhanced insulation and use of energy-efficient lighting and appliances as well as requiring a variety of other energy-efficiency measures to be incorporated into the proposed structures. Therefore, it is anticipated the Proposed Project will be designed and built to minimize electricity use and that existing and planned electricity capacity and electricity supplies would be sufficient to support the Proposed Project's electricity demand. Thus, the Project would not result in the wasteful or inefficient use of electricity; and no mitigation measures would be required

Operations-Related Natural Gas

Operation of the Proposed Project would result in increased consumption of natural gas at the Project site. According to the CalEEMod model printouts (see Appendix D), the Proposed Project would consume 350 million British Thermal Units (MBTU) per year of natural gas. This equates to 0.002 percent of the natural gas consumed annually in Ventura County. As such, the operations-related natural gas use would be nominal when compared to current natural gas usage rates in the County.

It should be noted that the Proposed Project would comply with all federal, State, and City requirements related to the consumption of natural gas, which includes CCR Title 24, Part 6 Building Energy Efficiency Standards and CCR Title 24, Part 11: California Green Building Standards (CALGreen Code). The CCR Title 24, Part 6 and Part 11 standards require numerous energy efficiency measures to be incorporated into the proposed warehouse. Therefore, it is anticipated the Proposed Project will be designed and built to minimize natural gas use and that existing and planned natural gas capacity and natural gas supplies would be sufficient to support the Proposed Project's natural gas demand. Thus, impacts with regard to natural gas supply and infrastructure capacity would be less than significant; and no mitigation measures would be required.

Operations-Related Petroleum Fuel

Operation of the Proposed Project would result in increased consumption of petroleum-based fuels related to vehicular travel to and from the Project site. As calculated in Appendix D, the Project would consume 20,727 gallons of transportation fuel per year. This equates to 0.006 percent of the gasoline and diesel consumed in the County annually. As such, the operations-related petroleum use would be nominal when compared to current petroleum usage rates in the County.

Additionally, the Project would comply with all federal, State, and County requirements related to the consumption of transportation energy, including CCR Title 24, Part 11, the CALGreen Code, which requires all new parking lots to provide preferred parking for clean air vehicles. Therefore, it is anticipated the Project will be designed and built to minimize transportation energy through the promotion of the use of electric-powered vehicles and that existing and planned capacity and supplies of transportation fuels would be sufficient to support the Project's demand. Thus, impacts regarding transportation energy supply and infrastructure capacity would be less than significant; and no mitigation measures would be required.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Less Than Significant Impact. The Proposed Project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. The applicable plan for the Proposed Project is the *City of Moorpark General Plan Open Space, Conservation and Recreation Elements,* adopted August 4, 1986, that provides policies that promote renewable energy and energy efficiency. The Proposed Project would be required to meet the Title 24, Part 6 building energy efficiency requirements that require incorporation of several energy efficiency measures into the design of the proposed warehouse, including use of LED lighting, enhanced insulation and windows, and high-efficiency ventilation and appliances. In addition, the Proposed Project would be required to meet the Part 11 CALGreen Code, which provides minimum requirements for bicycle parking, carpool/vanpool/electric vehicle parking spaces, use of water-efficient plumbing and landscaping fixtures, recycling and use of recycled materials in building products. Specific CALGreen requirements that are applicable to the Proposed Project include requiring that a minimum of 65 percent of construction waste be diverted from landfills, providing bicycle parking spaces, and providing electric vehicle charging stations within the proposed parking structure. Through implementation of the above programs, regulations, and policies, the Proposed Project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. Impacts would be less than significant.

4.7 GEOLOGY AND SOILS

7.	GEOLOGY AND SOILS. Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
	i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
	ii) Strong seismic ground shaking?	☐	☐	☒	☐
	iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
	iv) Landslides?	☐	☐	☒	☐
(b)	Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
(c)	Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
(d)	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
(e)	Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

7.	GEOLOGY AND SOILS. Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(f)	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

4.7.1 Environmental Setting

A Geotechnical Engineering Investigation was prepared for the Project by NorCal Engineering on April 8, 2022. Geotechnical evaluations included the placement of electronic cone penetrometers, subsurface exploratory borings by a truck-mounted drill rig, continuous flight augers, hand-operated augers, and exploratory trenches by backhoe. The report presents results and recommendations for the Project site which are summarized below. The full report is provided in Appendix E.

4.7.2 Impact Analysis

a) *i) Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.*

Less Than Significant Impact. The city is located in a region with several active faults and therefore is subject to the risks and hazards associated with earthquakes. The Project site is located approximately 2 miles north of the Simi-Santa Rosa Fault Zone (DOC 2022b). The California Division of Mines and Geology has designated an Alquist-Priolo Fault Zone for many of the traces of the Simi-Santa Rosa fault zone. According to the Project's Geotechnical Report, the Project site is outside any Alquist-Priolo Special Studies Zone and the potential for damage due to direct fault rupture is considered unlikely. With adherence to the latest California Building Code (CBC) and following recommendations and guidelines set forth in the Geotechnical Study, impacts would be less than significant.

ii) Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

Less Than Significant Impact. As noted above in Impact 4.7.2 a) i), the Project site is located in a region with several active faults and is subject to potential ground shaking. According to the Geotechnical Report, the nearest earthquake fault is located less than 1.2 miles from the Project site and is capable of producing a Magnitude 6.7 earthquake. Impacts associated with strong seismic ground shaking would be minimal due to ground disturbance (up to 4 feet of excavation and grading) associated with the Project. Minimal grading required for the proposed warehouse structure and parking lot would not exacerbate the risk of ground shaking at the Project site. Therefore, implementation of the Project would result in a less than significant impact associated with strong seismic ground shaking.

iii) Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

Less Than Significant Impact. The Project site is located within the Moorpark liquefaction zone (DOC 2022a). According to the Geotechnical Report, the Project site is situated in an area of historic occurrence of liquefaction or local geological, geotechnical, and groundwater conditions to indicate a potential for permanent ground displacement. Based on the California Division of Mines and Geology Seismic Hazard Zone Report for the *Moorpark* 7.5-minute quadrangle, the Project site is mapped with a historic groundwater depth of 20 feet deep (Appendix E). The Geotechnical Analysis indicated the potential for liquefaction at the Project site is moderate, based upon a historic groundwater depth of 20 feet deep and a peak ground acceleration (PGAM) of 0.83g. NorCal Engineering recommends that a stiffened foundation system, consisting of a mat foundation at least 12 inches thick to support the new structure, be utilized for the proposed structure to mitigate for the seismic-induced settlements. Following recommendations in the Geotechnical Report, the risk of loss, injury, or death involving seismic-related ground failure or liquefaction on the Project site is low; therefore, impacts would be less than significant.

iv) Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

Less Than Significant Impact. The Project site is relatively flat, with elevations on site ranging from approximately 440 to 460 feet. The Department of Conservation's Earthquake Hazards Zone Application does not distinguish the Project site as a landslide zone (DOC 2022c). The Geologic Report does not mention signs of previous landslide activity within the Project site. The risk of loss, injury, or death involving landslides on the Project site is low; therefore, impacts would be less than significant.

b) *Would the project result in substantial soil erosion or the loss of topsoil?*

Less Than Significant Impact. Construction activities associated with the Project would comprise grading, excavation, and recompaction throughout the site. Because the Project would involve soil disturbance, and the proposed structure and parking lot would introduce impervious surfaces to the Project site in excess of 1 acre; a Storm Water Pollution Prevention Plan (SWPPP) will be written and implemented. A SWPPP identifies BMPs to further reduce soil erosion during construction; these BMPs would be consistent with the Ventura County Technical Guidance Manual for Stormwater Quality Control Measures (County 2011). The identification and implementation of construction BMPs would include, but are not limited to, watering soil, soil cover of inactive areas, gravel bags, and fiber rolls to minimize the potential impacts. Therefore, implementation of the Project would result in less than significant impacts associated with soil erosion or the loss of topsoil.

c) Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Less Than Significant Impact. As discussed above, the Project site is not within an active fault or landslide zone but is in close proximity to earthquake faults in the area and within the Moorpark liquefaction zone (DOC 2022b). The city is underlain primarily by two types of geologic units: relatively weak semi-consolidated sedimentary bedrock in the hilly and mountainous areas and loose, unconsolidated, alluvial sediments in the valleys and canyon bottoms (City 2001). Considering the Project involves construction of a new warehouse and parking lot, and ground disturbance would be limited to grading, excavation (up to 4 feet in depth), and recompaction, the risk of landslide, lateral

spreading, subsidence, liquefaction, or collapse as a result of the Project is low. Impacts would be less than significant.

d) Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Less Than Significant Impact. Expansive soils are certain types of clay soils that expand when saturated and shrink when dried. According to the United States Department of Agriculture's (USDA) Web Soil Survey, the soils on the Project site are primarily loamy sand and sandy alluvial land, which have a high permeability and are somewhat excessively drained (USDA 2022). The Geotechnical Report noted that granular soils with a very low expansion potential were observed in the upper 12 feet of the Project site; expansive soils were encountered from 12 to 26 feet deep (Appendix E). Soils identified within the Project site that have a large clay component were identified only deeper than 12 feet, and Project construction would excavate to a maximum depth of 4 feet; therefore, expansive soils would not be encountered, and impacts would be less than significant.

e) Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

No Impact. The Project would involve the construction of a new warehouse facility with associated offices that would be connected to the existing sewer infrastructure; therefore, the Project would not require the installation of new septic tanks or alternative wastewater disposal systems. No impact would occur.

f) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less Than Significant Impact. A paleontological record search was conducted by the Natural History Museum of Los Angeles County on November 19, 2021. The search produced no known fossil localities that lie within the Proposed Project site, but localities have been documented nearby within the same sedimentary deposits as found within the Project site (Appendix F).

Due to the sensitivity of the Project site and the surrounding area to produce paleontological resources during ground-disturbing activities, Conditions of Approval set by the City of Moorpark will be complied with to reduce potential impacts associated with ground disturbance. In addition, following the County of Ventura's goals pertaining to paleontological resources outlined in Sections 1.8.1 and 1.8.2 of the Resources Element of the County of Ventura General Plan, these Conditions of Approval will be implemented to ensure that the Guidelines of the Society of Vertebrate Paleontology (SVP) and the Guidelines of the State Office of Historic Preservation are fulfilled and will be performed in consultation with professional archaeologists and paleontologists. Therefore, impacts to paleontological resources to a less than significant level.

CA-2: Paleontological Plan: If paleontological remains are discovered, a paleontological mitigation plan outlining procedures for paleontological data recovery must be prepared and submitted to the Community Development Director for review and approval. The development and implementation of this Plan must include consultations with the Applicant's engineering geologist as well as a requirement that the curation of all specimens recovered under any scenario will be through the Los

Angeles County Museum of Natural History (LACMNH). All specimens become the property of the City of Moorpark unless the City chooses otherwise. If the City accepts ownership, the curation location may be revised. The monitoring and data recovery should include periodic inspections of excavations to recover exposed fossil materials. The cost of this data recovery is limited to the discovery of a reasonable sample of available material. The interpretation of reasonableness rests with the Community Development Director.

4.8 GREENHOUSE GAS EMISSIONS

8.	GREENHOUSE GAS EMISSIONS. Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
(b)	Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

4.8.1 Environmental Setting

Climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period of time. Climate change is the result of numerous, cumulative sources of greenhouse gases (GHGs) that contribute to the "greenhouse effect," a natural occurrence that takes place in Earth's atmosphere to help regulate the temperature of the planet. The majority of radiation from the sun hits Earth's surface and warms it. The surface, in turn, radiates heat back toward the atmosphere in the form of infrared radiation. Gases and clouds in the atmosphere trap and prevent some of this heat from escaping into space and re-radiate it in all directions. However, anthropogenic activities since the beginning of the industrial revolution (approximately 250 years ago) are adding to the natural greenhouse effect by increasing the gases in the atmosphere that trap heat. Emissions resulting from human activities thereby contribute to an average increase in Earth's temperature.

The majority of individual projects do not generate sufficient GHG emissions to directly influence climate change. However, physical changes caused by a project can contribute incrementally to cumulative effects that are significant, even if individual changes resulting from a project are limited. The issue of climate change typically involves an analysis of whether a project's contribution toward an impact would be cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (CEQA Guidelines, Section 15064[h][1]).

Significant legislative and regulatory activities directly and indirectly affect climate change and GHGs in California. The primary climate change legislation in California is Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006. AB 32 focuses on reducing greenhouse gas emissions in California and requires that GHGs emitted in California be reduced to 1990 levels by the year 2020. In addition to AB 32, Executive Order B-30-15 was issued on April 29, 2015, that aims to reduce California's GHG

emissions 40 percent below 1990 levels by 2030. In September 2016, AB 197 and Senate Bill (SB) 32 codified into statute the GHG emission reduction targets provided in Executive Order B-20-15.

CARB is the State agency charged with monitoring and regulating sources of emissions of GHGs in California that contribute to global warming in order to reduce emissions of GHGs. The CARB Governing Board approved the 1990 GHG emissions level of 427 million metric tons of CO_2 equivalent ($MtCO_2e$) on December 6, 2007. Therefore, in 2020, annual emissions in California are required to be at or below 427 $MtCO_2e$. The CARB Board approved the Climate Change Scoping Plan (Scoping Plan) in December 2008, the First Update to the Scoping Plan in May 2014, and California's 2017 Climate Change Scoping Plan in November 2017. The Scoping Plans define a range of programs and activities that will be implemented primarily by State agencies but also include actions by local government agencies. Primary strategies addressed in the Scoping Plans include new industrial and emission control technologies; alternative energy generation technologies; advanced energy conservation in lighting, heating, cooling, and ventilation; reduced-carbon fuels; hybrid and electric vehicles; and other methods of improving vehicle mileage. Local government will have a part in implementing some of these strategies. The Scoping Plans also call for reductions in vehicle-associated GHG emissions through smart growth that will result in reductions in vehicle miles traveled (CARB 2010, 2016, 2017, 2018).

The VCAPCD has not yet adopted any GHG thresholds. However, at its September 13, 2011, Board meeting, the Ventura County Air Pollution Control Board (VCAPCB) requested that VCAPCD staff report back on possible GHG significance thresholds for evaluating GHG impacts of land use projects in Ventura County under CEQA. As such, the VCAPCD staff prepared the Greenhouse Gas Thresholds of Significance Options for Land Use Development Projects in Ventura County, November 8, 2011. The report presented a number of options for setting GHG significance thresholds and analyzed some of the adopted thresholds as well as others that were currently under consideration by other air districts in California. The report concluded that establishing local CEQA significance thresholds for global-scale environmental concerns is a major challenge, and each of the numerous approaches and options that have been put forth to assess GHG emissions from land use development projects for CEQA purposes has their own set of advantages and disadvantages. While the report did not establish a specific approach that would be used by the VCAPCD to analyze GHG impacts under CEQA, it indicated that because Ventura County is adjacent to the SCAQMD's jurisdiction and is a part of the region represented by the Southern California Association of Governments (SCAG), it would be most desirable for the VCAPCD to set local GHG emission thresholds of significance for land use development projects at levels consistent with those set by the SCAQMD. Therefore, based on the report's recommendations, the VCAPCD would continue to evaluate and develop suitable interim GHG threshold options for Ventura County with preference for GHG threshold consistency with the SCAQMD and the SCAG region.

In order to identify significance criteria under CEQA for development projects, SCAQMD initiated a Working Group, which provided detailed methodology for evaluating significance under CEQA. At the September 28, 2010, Working Group meeting, the SCAQMD released its most current version of the draft GHG emissions thresholds, which recommends a tiered approach that provides a quantitative annual threshold of 3,000 $MtCO_2e$ for all land use projects.

4.8.2 Impact Analysis

a) Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less Than Significant Impact. The CalEEMod model used above to calculate the criteria pollutant emissions was also utilized to calculate the GHG emissions associated with construction and operation of the Proposed Project (see Appendix G). The CalEEMod model calculated GHG emissions generated from both construction and operation of the Proposed Project. Per the analysis methodology presented in the SCAQMD Working Group meetings, the construction emissions were amortized over 30 years. Table 6 shows the estimated GHG emissions that would be predicted from development of the Proposed Project.

Table 6: Annual Greenhouse Gas Emissions from the Proposed Project

Sector	Greenhouse Gas Emissions (Metric Tons per Year)			
	CO_2	CH_4	N_2O	CO_2e
Area Sources	<0.01	0.00	0.00	<0.01
Energy Uses	94.92	<0.01	<0.00	95.42
Mobile Sources	190.36	0.01	<0.01	193.42
Solid Waste	16.13	0.95	0.00	39.96
Water and Wastewater	43.68	0.54	0.01	60.92
Construction[1]	15.79	0.03	<0.01	16.00
Total GHG Emissions	**360.88**	**1.54**	**0.02**	**405.73**
Threshold of Significance				**3,000**
Exceed Threshold?				No

Notes:

[1] Construction emissions amortized over 30 years as recommended in the SCAQMD GHG Working Group on November 19, 2009.

Source: CalEEMod Version 2020.4.0 (see Appendix G).

As shown in Table 6, the Proposed Project would generate 405.73 $MtCO_2e$ per year, which is within the 3,000-$MtCO_2e$-per-year threshold that is described above. It should also be noted that the proposed structures will be required to meet the 2019 Title 24 Part 6 building standards that require the proposed warehouse to install enhanced insulation as well as energy-efficient lighting and appliances. The City also requires all new developments to institute the water conservation measures that are detailed in the California Green Building Code. For these reasons, a less than significant generation of greenhouse gas emissions would occur from construction and operation of the Proposed Project.

b) *Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?*

Less Than Significant Impact. The Proposed Project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing GHG emissions. Neither the City of Moorpark nor the VCAPCD has adopted a Climate Action Plan or other qualified GHG reduction plan. SCAG has incorporated a sustainable community strategy into its 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) plan, which is designed to help the region achieve its SB 375 GHG emissions reduction targets. The SCAG's 2016-2040 RTP/SCS demonstrates that the SCAG region would achieve its regional emissions reduction targets for the 2020 and 2035 target years (SCAG 2020). The Proposed Project would not alter the basic population projections used in the plan

and would be consistent with the City of Moorpark General Plan land use designation for the Project site.

The Proposed Project would be required to comply with existing State regulations for reducing GHG emissions, which include Title 24 Part 6 and Part 11 energy efficiency requirements. As such, since there are no applicable local GHG reduction plans and the Proposed Project would comply with all regional (SCAG) and State regulations intended to reduce GHG emissions, the Proposed Project would be consistent with the applicable plans and programs designed to reduce GHG emissions. Impacts would be less than significant.

4.9 HAZARDS AND HAZARDOUS MATERIALS

9.	HAZARDS AND HAZARDOUS MATERIALS. Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
(b)	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
(c)	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
(d)	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐
(e)	For a project located within an airport land use plan or, where such a plan had not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
(f)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
(g)	Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	☐	☐	☒	☐

4.9.1 Environmental Setting

A Phase I Environmental Site Assessment (Phase I ESA) was prepared for the Project by BBG in November 2021. The purpose of the Phase I ESA is to identify Recognized Environmental Conditions (RECs), Controlled Recognized Environmental Conditions (CRECs), Historical Recognized environmental

Conditions (HRECs), and de minimis conditions as defined by ASTM E1527-13. The full report is included as Appendix H.

4.9.2 Impact Analysis

a) Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less Than Significant Impact. The expansion of the Pentair facility would be consistent with the existing facility activities which handle and maintain hazardous materials and hazardous wastes and operate aboveground storage tanks. The Project site is located in an industrial area and is not adjacent to any sensitive receptors. Operations at the facility already require the transport, use, and disposal of hazardous materials; and no significant hazards have been created for the public. Nonetheless, all construction and operational activities would be required to adhere to local standards set forth by the City, as well as State and federal health and safety requirements that are intended to minimize risk to the public from hazardous materials, such as California Division of Occupational Safety and Health (Cal/OSHA) requirements, the Hazardous Waste Control Act, the California Accidental Release Prevention (CalARP) Program, and the California Health and Safety Code. As a result, the Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Therefore, impacts regarding transport, use, or disposal of hazardous materials would be less than significant.

b) Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less Than Significant Impact. Construction activities require excavation and grading, utility work, surface paving operations, and landscaping. Operations on site will be industrial in nature and will involve the routine transport, use, or disposal of hazardous materials. Potentially hazardous materials, including but not limited to gasoline, oil, solvents, cleaners, paint, pesticides, and fertilizer, may be used during construction and operation of the Project. Nonetheless, all construction and operational activities would be required to adhere to local standards set forth by the City, as well as State and federal health and safety requirements that are intended to minimize risk to the public from hazardous materials, such as Cal/OSHA requirements, the Hazardous Waste Control Act, the CalARP Program, and the California Health and Safety Code.

Pentair has not had any accidents or upset involving release of hazardous materials on site creating a significant hazard to the public. Expansion of the Pentair facility as part of the Project would not increase hazards to the public. Therefore, construction and operational impacts for these issues would be less than significant.

c) Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Less Than Significant Impact. Project construction would involve the use of heavy equipment and other gas- or diesel-powered equipment that would generate emissions associated with internal combustion engines (i.e., diesel and gasoline). As described in impacts 4.9.1 a) and b) above, construction would also require temporary transport of potentially hazardous commercial materials,

including but not limited to gasoline, oil, solvents, cleaners, paint, pesticides, and fertilizer. The existing Pentair facility handles and maintains hazardous materials and hazardous wastes and operates aboveground storage tanks.

However, the Project site is located in the western portion of the City, with primarily agricultural and industrial land uses surrounding the site. Heavy equipment and vehicles which may be transporting or emitting hazardous materials during Project construction would use Los Angeles Road for access to the site. Furthermore, Project operations would be consistent with local regulations and standards set forth by the City, State, and federal governments. Therefore, construction and operational impacts for these issues would be less than significant.

d) *Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?*

Less Than Significant Impact. A review of federal and State standard and supplemental databases indicated that the Project site is not located within an identified hazardous material site pursuant to Government Code Section 65962.5. No active hazardous material cleanup sites were identified within 1 mile of the Project site (Appendix H). Considering the absence of active hazard cases in the vicinity of the Project site, impacts would be less than significant.

e) *For a project located within an airport land use plan or, where such a plan had not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?*

No Impact. The Project site is located approximately 9.7 miles southeast of Santa Paula Airport and 11 miles northeast of Camarillo Airport (Google Maps 2022). The Project site is not within the Airport Influence Area for either of these airports (ALUC 2000). No impact regarding safety hazards or excessive noise related to airports would occur.

f) *Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*

Less Than Significant Impact. The Project is located within the Local Responsibility Area (LRA) Very High Fire Severity Zone (VHFSZ) (CALFIRE 2020). As mentioned in Section 4.9 above, the City has developed an Emergency Services Program that includes City staff's receiving training in emergency preparedness, management, and mitigation; the City's maintaining the Emergency Operations Center (EOC); the City's organizing and training a Disaster Assistant Response Team composed of volunteers; and the City's promoting emergency planning, training, public awareness, and education (City 2001). Additionally, the County's Multi-Hazard Mitigation Plan (MHMP) includes an overview of the risk assessment process and identifies hazards present in the jurisdiction, hazard profiles, and vulnerability assessments. The plan also identifies goals, objectives, and actions for each jurisdiction in the County, including participating cities (such as Moorpark) and the County unincorporated areas (County 2015). The Project would not interfere with the City's Emergency Services Program or the MHMP because it would not prohibit subsequent programs or plans from being established or prevent the goals and objectives of existing plans from being carried out. Thus, impacts would be less than significant.

g) Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

Less Than Significant Impact. Although the Project site is within the LRA VHFSZ, the Project is in an area with minimal elevation change and no steep slopes. The Project borders vegetated open space on the south and north sides, but the adjacent warehouse building is set back from the parcel boundary and will be separated from the vegetation by parking lots, loading areas, and an asphalt fire lane. These areas provide a minimum 100-foot buffer around the warehouse structure in compliance with the Ventura County Fire Department's Fire Hazard Reduction Program. Additionally, all construction would comply with the City's Building Code Section 15.08.060 Fire Hazard Zone Requirements and the County's Fire Protection Ordinance (City 2020c; County 2020b). Moreover, use of the Project site would be substantially similar to the adjacent warehouse; therefore, Project operations would not exacerbate the risk of loss or injury from wildland fires. Impacts would be less than significant.

4.10 HYDROLOGY AND WATER QUALITY

10.	HYDROLOGY AND WATER QUALITY. Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
(b)	Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
(c)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
	i) Result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
	ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flood on- or off-site;	☐	☐	☒	☐
	iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
	iv) Impede or redirect flood flows?	☐	☐	☒	☐
(d)	In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
(e)	Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

4.10.1 Environmental Setting

Preliminary Hydrology Calculations were prepared for the Project by Thienes Engineering on January 10, 2022, and revised on March 10, 2022, and May 24, 2022. These calculations determined the existing and proposed 100-year peak flow rates from the Project site, which drains to Gabbert Canyon Channel along the southern boundary of the site. Additionally, a Low Impact Development (LID) was prepared for the Project by Thienes Engineering on May 20, 2022. According to the Geotechnical Report and LID, infiltration is considered feasible. The Proposed Project will treat stormwater runoff and disconnect runoff from impervious areas by means of underground retention system. Results from the Preliminary Hydrology Calculations and LID have been incorporated below; for more detail regarding methods, refer to Appendices I and J, respectively.

4.10.2 Impact Analysis

a) *Would the project violate any water quality standards or waste discharge requirements, or otherwise substantially degrade surface or ground water quality?*

Less Than Significant Impact. Project construction would require temporary disturbance of surface soils and removal of vegetative cover through grading and excavation for the proposed parking lot. Grading activities therefore could potentially result in erosion and sedimentation on site, which may alter the existing drainage pattern. The Project site has a slight downward slope with the lower portion of the site on the southern portion of the Project site, so the potential for soil erosion is low, but peak stormwater runoff could result in short-term sheet erosion in areas of exposed soils.

The Project would be required to obtain coverage under a Construction General Permit to comply with NPDES requirements. Compliance with the Construction General Permit would require the development and implementation of a SWPPP and associated BMPs. The BMPs would include measures that would be implemented to prevent discharge of eroded soils from the construction site and sedimentation of surface waters off site. Given the relatively flat topography of the site and implementation of the required SWPPP, construction of the Project would not violate any water quality standards or waste discharge requirements.

Once developed, the Project will increase the imperviousness on the site from its existing conditions with the addition of parking lot and warehouse facility. To prevent significant impacts due to increased runoff at the Project site, catch basins would be installed throughout the site; and an onsite storm drain system will convey runoff to Gabbert Canyon Channel. With implementation of these design features, Project operations would not substantially degrade surface or groundwater quality; impacts would be less than significant.

b) *Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?*

Less Than Significant Impact. The Project site is located within the boundaries of the Groundwater Sustainability Plan (GSP) for the Las Posas Valley Basin (FCGMA 2007). The GSP projects future water demands based on historic water availability and demand, as well as buildout of the General Plan. Once the applicant obtains the CUP from the City, the Project will be consistent with the zoning and

land use of the Project site. Therefore, projected groundwater demands in the GSP generally take into account water demand from the Project. Impacts would be less than significant.

c) *Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:*

i) *result in substantial erosion or siltation on- or off-site;*

Less Than Significant Impact. Project construction would require temporary disturbance of surface soils and removal of vegetative cover through grading and excavation (up to 4 feet in depth) for the proposed parking lot. Grading activities therefore could potentially result in erosion and sedimentation. The Project site is relatively flat; therefore, the potential for soil erosion is low; however, peak stormwater runoff could result in short-term sheet erosion in areas of exposed soils. Compliance with the Construction General Permit would require the development and implementation of a SWPPP and associated BMPs. Impacts related to erosion and siltation are less than significant.

ii) *substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;*

Less Than Significant Impact. Implementation of the Project will increase the imperviousness on the site with the addition of a new parking lot on the undeveloped land to the northwest and east. To prevent significant impacts due to increased runoff at the Project site, catch basins will be installed throughout the site; and an onsite storm drain system will convey runoff to proposed underground infiltration/detention systems located on site. Outlets from these retention/detention areas will follow existing drainage patterns and the outlet to Gabbert Canyon Channel (Appendix I).

iii) *create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources or polluted runoff; or*

Less Than Significant Impact. To prevent significant impacts due to increased runoff from full buildout at the Project site, catch basins will be installed throughout the site; and an onsite storm drain system will convey runoff to proposed underground infiltration/detention systems located on site. Outlets from these retention/detention areas will follow existing drainage patterns and the outlet to Gabbert Canyon Channel (Appendix I). In maintaining existing drainage patterns, runoff flows would not be substantially redirected with implementation of the Project, and impacts would be less than significant.

iv) *impede or redirect flood flows?*

Less Than Significant Impact. The Project site overlaps with the Federal Emergency Management Agency's (FEMA's) mapped Zone X areas determined to be outside the 0.2 percent annual chance floodplain and the southern portion of the site under Zone X Shaded areas of 0.2 percent annual chance flood; areas of 1 percent annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1 percent annual chance flood. (FEMA 2022). The areas that overlap with Zone X Shaded include parking and

circulation aisles, entrance to the site, the southeast portion of the warehouse, and landscaping. New parking lots on site have the potential to redirect flood flows by introducing new impervious surface. In maintaining existing drainage patterns, flood flows would not be substantially redirected with implementation of the Project; and impacts would be less than significant.

d) *Would the project in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?*

Less Than Significant Impact. As previously mentioned, the Project is located within the FEMA Zone X and Zone X Shaded floodplain, as discussed in threshold (c(iv)). However, operations at the Project site would be similar to existing operations adjacent to the site with use and storage of hazardous materials onsite. Additionally, a new warehouse structure would be constructed, and drainage patterns would be designed to remain the same as existing drainage patterns; therefore, the risk of pollutant release would not increase. The Project is also over 20 miles east of the Pacific Ocean and is not in the vicinity of any waterbodies that have potential to produce a seiche (Google Maps 2022). Impacts would be less than significant.

e) *Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?*

Less Than Significant Impact. The Project is located within the Ventura County Waterworks District 1 service area (VCPW 2020). Project construction would introduce new impervious services, and drainage patterns would remain the same as existing drainage patterns. The site would be required to comply with City regulations that require runoff from the site be 90 percent of existing conditions (Appendix I, Appendix J). The Project would utilize the existing water and sewer infrastructure on site, and Project operations would remain substantially similar to adjacent operations. A substantial increase in groundwater extraction is not expected to result from the Project. Moreover, the Project would apply for a NPDES permit and prepare a SWPPP to reduce polluted stormwater runoff. The Project would therefore not conflict with or obstruct the Ventura County Waterworks District's Urban Water Management Plan (VCWWD 2021), and impacts would be less than significant.

4.11 LAND USE AND PLANNING

11.	LAND USE/PLANNING Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Physically divide an established community?	☐	☐	☐	☒
(b)	Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☒	☐	☐

4.11.1 Impact Analysis

a) *Would the project physically divide an established community?*

No Impact. The Project would build a new warehouse on the Project site to support the existing adjacent warehouse facility. Construction activities would occur within the footprint of the proposed site. Ground disturbance would be required for construction of the proposed new parking lot and warehouse on vacant land adjacent to the existing building. Implementation of the Project would not result in a change in land use or zoning, and the Project does not include features that would preclude mobility across the Proposed Project site. Construction and operational Project activities would not physically divide an established community. No impact would occur.

b) *Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?*

Less than Significant Impact with Mitigation Incorporated. The Project would involve addition of a warehouse next to the existing Pentair facility, which would be considered an approved land use for the M-2 zone.

A Traffic and Circulation Study (TCS) was prepared for the Project by Stantec on April 6, 2022, in order to assess conflicts with land use policies or regulations related to traffic and circulation. The report summarizes the data collected, background and projected traffic at the study locations, analysis of traffic impacts based on trip generation and trip distribution, assessment of circulation at the site entrance, discussion of the levels of service (LOS) for consistency with the General Plan, and conclusions/recommendations from the analysis (Stantec 2022; Appendix K).

A total of 12 intersections were selected for analysis in consultation with City of Moorpark staff. Because current AM and PM commute traffic continues to be affected by both temporary workforce changes and increase in telecommuting, new traffic counts at these intersections would not be considered to be representative of traffic flow occurring under normal conditions. Stantec therefore used intersection counts collected in May 2019 and provided by the City. New average daily traffic (ADT) counts were collected on Los Angeles Avenue, and new counts were collected at the Los Angeles Ave/Montair Dr intersection in October 2021.Table 2 of Appendix K presents the Existing Condition peak-hour volumes for these locations.

While VMT is the current method used to analyze a project's traffic impacts, analysis of the LOS can determine a project's consistency to the existing land uses and with the General Plan's Circulation Element (City 1992). Level of service (a rating ranging from excellent operating conditions at LOS A to failing operating conditions at LOS H) is a concept developed to quantify the degree of comfort experienced by drivers. Per City of Moorpark Guidelines for Preparing Traffic and Circulation Studies, the minimum acceptable operating standard LOS for intersections is LOS C. If the LOS for a traffic analysis location falls below LOS C attributable to traffic generated by a proposed project, additional mitigation measures must be considered to improve LOS with a proposed project. In addition, the City's Circulation Element states that "Level of service 'C' shall be the system performance objective for traffic volumes on the circulation system. For roadways and interchanges already operating at less than level of service 'C', the system performance objective shall be to maintain or improve the current level of service" (City 1992).

It should be noted that, per City of Moorpark Guidelines for Preparing Traffic and Circulation Studies, lane capacities of 1,500 vehicles per hour (vph) for left and right turn lanes and 1,600 vph for through lanes should be assumed throughout the Intersection Capacity Utilization (ICU) analysis.

A traffic analysis was conducted for future traffic conditions, including traffic anticipated to be generated by the Proposed Project, referred to as the "Existing Plus Project"(Appendix K). One unsignalized intersection, Los Angeles Avenue and Montair Drive, would have additional delays from implementation of the Project. Currently, this intersection operates at the volume to capacity (v/c) of 31.1 seconds and LOS of D, and during AM operations service at the intersection would increase to a v/c of 35.9 seconds and a LOS of E. PM Peak-hour intersection levels of service would face an increase of more than 5 seconds and continue operating at LOS F both in existing conditions and existing with the Project, which would be considered an impact based on City thresholds. The remaining signalized intersections operate at LOS D or better in the weekday AM and PM peak hours.

Per the City of Moorpark Guidelines for Preparing Traffic and Circulation Studies, an LOS degradation of one level or greater below LOS C attributable to the Project will be considered significant enough to require mitigation measures. In addition, depending on the circumstances, less than one level of LOS degradation may be considered significant as well. Based on these criteria, levels of service degradation were identified at the intersection listed above in the Existing with the Proposed Project Condition. With the implementation of mitigation measures LU-1 and LU-2, LOS impacts at the intersection of Los Angeles Avenue and Montair Drive would be reduced to a level less than significant.

MM-LU-1 Install a signal at the intersection of Los Angeles Avenue and Montair Drive

MM-LU-2 Restrict the proposed driveway on Los Angeles Avenue between the existing facility and proposed facility to emergency vehicles only and design to accommodate emergency vehicle turning requirements

4.12 MINERAL RESOURCES

12.	MINERAL RESOURCES Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
(b)	Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

4.12.1 Impact Analysis

a) Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No Impact. According to the City's General Plan, no known mineral resources of statewide significance are within the City's limits. West and northwest of the City are mineral resource zones designated MRZ-2, which refers to areas where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presence exists (City 1986), although these areas are outside the City limits and therefore do not encompass the Project site. Moreover,

two active open-pit sand and gravel mines are approximately 4 miles north of the Project site; but no mines are reported within the Project site (DOC 2022d). No impact would occur.

b) *Would the project result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?*

No Impact. The City's General Plan does not designate any locally important mineral resource recovery sites within the City boundaries (City 1986). Two active open-pit sand and gravel mines are approximately 4 mile north of the Project site, but no mines are reported within the Project site (DOC 2020d). No impact would occur.

4.13 NOISE

13.	NOISE Would the project result in:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
(b)	Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
(c)	For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

4.13.1 Impact Analysis

a) *Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*

Less Than Significant Impact. The Noise Element of the City's General Plan implements goals and policies to maintain acceptable environmental noise levels to protect City residents from excessive noise. The Noise Element establishes noise standards for single-family and multiple-family residential land uses as 65 Community Noise Equivalent Level (CNEL) for the exterior environment, 55 CNEL for the interior environment with windows open, and 45 CNEL for the interior environment with windows closed (City 1998).

Background noise, or ambient noise, is the noise level of normal and existing noise levels of a given area. In the city, the four major sources of noise are traffic on SR 118 and the Southern Pacific Railroad tracks adjacent to the site; traffic on arterials and local collector roadways; rail traffic on the east/west rail line bisecting the city; and commercial, industrial, and recreational activities adjacent to residential locations (City 1998). The Project is located adjacent to a developed and fully operational

warehouse adjacent to SR 118 and an existing rail line. The existing immediate sources of ambient noise come from SR 118, the rail line, vehicles (personal, commercial trucks, and shipping trucks) and other outdoor noises from customers and employees. The Project would not introduce a new noise source that would result in a permanent increase in ambient noise levels because the proposed operations would be similar to the site's adjacent operations.

Section 17.53.070.F of the City Municipal Code prohibits the operation of any tools or equipment used in construction, drilling, repair, alteration, or demolition work so as to violate the noise standards between weekday (Saturdays and legal holidays observed by the City included) hours from 7:00 p.m. to 7:00 a.m., or at any time on Sundays. During operations, Section 17.53.070.E of the Municipal Code prohibits the loading, unloading, opening, closing, or other handling of boxes, crates, containers, building materials, garbage cans, or similar objects between the hours of 10:00 p.m. and 7:00 a.m. any day of the week in such a manner as to cause a noise disturbance across a residential property line or at any time to violate the provisions of Section 17.53.050.

Construction of the Project would result in a temporary increase of construction noises. Proposed construction activities would be limited to the hours from 7:00 a.m. to 7:00 p.m. Monday through Saturday to avoid violation of noise standards set by the City Municipal Code. Following Project implementation, the Project site will be operating 24 hours a day, 7 days a week; therefore, loading, unloading, opening, closing, or other handling of boxes, crates, or containers has the potential to occur between the hours of 10:00 p.m. and 7:00 a.m. The Project site is approximately 0.2 mile south of a residence on the north side of the existing rail lines of the Southern Pacific Railroad and approximately 100 feet different in elevation. With the existing operations at the adjacent facility, traffic, and rail operations, addition of the new warehouse facility would result in a less than significant noise impact.

b) *Would the project result in generation of excessive groundborne vibration or groundborne noise levels?*

Less Than Significant Impact. The Noise Element of the City General Plan implements goals and policies to maintain acceptable environmental noise levels to protect City residents from excessive noise. The Noise Element establishes noise standards for single-family and multiple-family residential land uses as 65 CNEL for the exterior environment, 55 CNEL for the interior environment with windows open, and 45 CNEL for the interior environment with windows closed (City 1998).

Section 17.53.070.F of the City Municipal Code prohibits the operation of any tools or equipment used in construction, drilling, repair, alteration, or demolition work that would violate the noise standards on weekdays (Saturdays and legal holidays observed by the City included) between the hours of 7:00 p.m. and 7:00 a.m., or at any time on Sundays. During operations, Section 17.53.070.E of the Municipal Code prohibits the loading, unloading, opening, closing, or other handling of boxes, crates, containers, building materials, garbage cans, or similar objects between the hours of 10:00 p.m. and 7:00 a.m. any day of the week in such a manner as to cause a noise disturbance across a residential property line or at any time to violate the provisions of Section 17.53.050.

Since the two-lane highway separates the Project site from sensitive receptors, noise, groundborne noise, and groundborne vibration levels generated from the highway would have a greater effect on the Buttercreek residences than the Project. These potential receptors are separated from the Project site by an existing farm. Moreover, these residences are 0.25 mile from the Southern Pacific Railroad

tracks, which would intermittently generate high noise and vibration levels in close proximity. Impacts related to noise, groundborne noise, and groundborne vibration resulting from the Project would be less than significant.

c) *For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public us airport, would the project expose people residing or working in the project area to excessive noise levels?*

No Impact. The Project site is located approximately 9.7 miles southeast of Santa Paula Airport and 11 miles northeast of Camarillo Airport (Google Maps 2022). The Project site is not within the Airport Influence Area for either of these airports (ALUC 2000). No impact regarding noise levels adjacent to an airport would occur.

4.14 POPULATION AND HOUSING

14.	POPULATION AND HOUSING. Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
(b)	Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

4.14.1 Impact Analysis

a) *Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?*

No Impact. The Project would occur within the existing vacant parcel adjacent to the warehouse building; and ground disturbance would result from proposed new parking lots, installation of catch basins, and construction of the new warehouse. Implementation of the Project would not result in the construction of new homes or businesses or result in the extension of roads or other infrastructure. Construction of the Project would result in the generation of temporary construction jobs; however, the additional jobs are expected to be filled by residents who currently live in the area. In addition, new jobs generated by the operation of the Pentair facility are also expected to be filled by nearby residents; therefore, the jobs would not result in the relocation of any population. The Project would not directly or indirectly induce substantial population growth through the creation of new homes or businesses, and no impact would occur.

b) *Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?*

No Impact. As discussed above in 4.14.1 Impact a), the Project would occur mainly within the existing vacant parcel with new ground disturbance associated with the proposed new parking lots, installation of catch basins, and construction of warehouse facility. The Project site does not contain any housing units; therefore, no existing housing units or people would be removed or displaced. The Project would not require the construction of replacement housing elsewhere. No impact would occur.

4.15 PUBLIC SERVICES

15.	PUBLIC SERVICES.	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
	i) Fire Protection?	☐	☐	☐	☒
	ii) Police Protection?	☐	☐	☐	☒
	iii) Schools?	☐	☐	☐	☒
	iv) Parks?	☐	☐	☐	☒
	v) Other public facilities?	☐	☐	☐	☒

4.15.1 Impact Analysis

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection?

No Impact. The Project consists of creation of a new warehouse to support the existing Pentair facility. The Project would provide approximately 85 new job opportunities, but these positions are expected to be filled by the local community and would not induce permanent population growth. Additionally, Ventura County Fire Station 40 is approximately 1.3 miles southeast of the Project site (Google Maps 2022). Considering Project operations would be substantially similar to adjacent uses, the Project is not expected to increase the demand for fire protection or require new facilities. No impacts would occur.

b) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for police protection?

No Impact. As previously mentioned, The Project consists of creation of a new warehouse to support the existing Pentair facility. The Project would provide approximately 85 new job opportunities. All new jobs are expected to be filled by the local community and would not induce permanent population growth. Further, the Ventura County Sheriff's Department is approximately 2.2 miles east of the Project site (Google Maps 2022). Considering Project operations would be substantially similar to adjacent uses, the Project is not expected to increase the demand for police protection or require new facilities. No impacts would occur.

c) *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for schools?*

No Impact. The Project consists of a new warehouse and parking facilities and would provide job opportunities to be filled by the local community. The Project site is approximately 1 mile northwest of the Moorpark High School, 1.4 mile northwest of Mountain Meadows School, 1.5 mile southwest of the Walnut Canyon School, and 1.8 miles west of the Flory Academy of Sciences and Technology and the ACCESS School (Google Maps 2022). The Project would not induce growth requiring the extension of existing educational services or creation of new services. The Project would not increase the demand for schools in the City. No impacts would occur.

d) *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for parks?*

No Impact. The Project consists of creation of a new warehouse to support the existing Pentair facility and construction of a new parking lot and would provide job opportunities to be filled by the local community. The Project would not induce growth requiring the extension of existing or creation of new park services. The Project would not increase the demand for parks. No impacts would occur.

e) *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for other public facilities?*

No Impact. The Project consists of creation of a new warehouse to support the existing Pentair facility and construction of new parking lot and would provide job opportunities to be filled by the local community. The Project would not induce growth requiring the extension of existing or creation of other public facilities. The Project would not increase the demand for other public facilities. No impacts would occur.

4.16 RECREATION

16.	RECREATION. Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
(b)	Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

4.16.1 Impact Analysis

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No Impact. One park is within a 1-mile radius of the Project site: Glenwood Park is located .76 mile east of the Project site (Google Maps 2022). The Project involves creation of a new warehouse and construction of new parking lot; and, therefore, use of the site would be substantially similar to adjacent uses of the existing Pentair facility. As previously mentioned, additional jobs generated by the Project are expected to be filled by residents who currently live in the area; and jobs would not result in the relocation of any population. Thus, the Project would not increase the use of the existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would be accelerated. No impact would occur.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

No Impact. The Project is a warehouse project and does not involve construction or expansion of recreational facilities; no impact would occur.

4.17 TRANSPORTATION

17.	TRANSPORTATION. Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadways, bicycle and pedestrian facilities?	☐	☒	☐	☐
(b)	Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☒	☐	☐

17.	TRANSPORTATION. Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(c)	Substantially increase hazards due to a geometric design feature (e. g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
(d)	Result in inadequate emergency access?	☐	☐	☒	☐

4.17.1 Environmental Setting

A VMT Analysis was prepared for the Project by Stantec on March 31, 2022. The report describes existing conditions, Project trip generation rates, and impact of the Project on existing conditions. The VMT Analysis is provided as Appendix L.

4.17.2 Impact Analysis

a) *Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadways, bicycle and pedestrian facilities?*

Less Than Significant Impact with Mitigation. Since the City does not yet have its own VMT threshold, the City is relying on the guidance provided in the Technical Advisory published by the Governor's Office of Planning and Research (OPR) in December 2018 (the "OPR Guidance") for purposes of evaluating the potential VMT impacts of development projects. Additionally the City references the County of Ventura VMT guidelines that provide analysis thresholds but do not provide screening criteria. The total estimated VMT per employee per day associated with the Project is 23.66, while the existing VMT per employee per day is expected to be the same due the similar nature of work that would be completed on site. The citywide work-based VMT is 23.13. In the OPR and County Guidance, the target for office development is a 15-percent reduction of VMT from the existing conditions. To meet the goal of 15-percent reduction, the VMT would need to be reduced to 19.66 per employee; however, this would still result in a significant impact.

The California Air Pollution Control Officers Association (CAPCOA) report on Quantifying Greenhouse Gas Mitigation Measures provides substantial evidence that various measures including a commuter trip reduction program can reduce VMT. Mitigation measure MM-TRA-1 would be implemented to reduce VMT-related impacts to a level less than significant.

MM TRA-1: The Project will provide an employer-sponsored vanpool (CAPCOA T-11). At a minimum 12 percent of employees will need to participate in the vanpool program. The Project will implement the program, and costs for the employer could include the vehicles, labor costs of the driver, and other incentives for employee participation.

The Project could select to implement this measure or other equivalent commuter trips reduction measure(s) that would achieve a similar VMT reduction, potential including but not limited to:

- rideshare incentive programs,

- ride matching services,
- discounted transit expense program,
- end of trip facilities, or
- telecommuting/alternative work schedules.

A VMT reduction of 16.9 percent is needed to reduce the Project VMT rate to a less than significant level. The calculation of the VMT reduction due to the vanpool as provided in Appendix L, shows that the vanpool mitigation would reduce VMT 16.9 percent.

In addition, during construction of the Project, activities would be restricted to the Project site and would not interfere with roadway traffic. The Project would also be subject to standard conditions of approval, which require the use of flagmen, temporary signage, and traffic calming measures, if necessary, during temporary construction activities. All construction equipment would be stored on site and would also not block the roadway. Therefore, the Project would not conflict with adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities and would not otherwise substantially reduce the performance or safety features of such facilities.

With implementation of MM TRA-1, the Project would not conflict with any program, plan, ordinance, or policy addressing the circulation system; thus, impacts would be less than significant.

b) *Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?*

Less Than Significant Impact with Mitigation. Section 15064.3(b) of the CEQA Guidelines describes criteria for analyzing transportation impacts. Depending on the type of project, different thresholds of significance are applicable. Section 15064.3(b)(1) applies to land use projects, including the Project:

> "Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be presumed to have a less than significant transportation impact."

As previously mentioned above, the Project would generate 23.66 VMT per employee per day. However, with implementation of MM TRA-1, including various travel demand management strategies, impacts regarding VMT will be reduced to a less than significant level (Appendix L). The Project is also located approximately 0.6 mile from the Tierra Rejada and Courtney Lane Moorpark City Transit bus stop on both Routes 1 and 2 (Google 2022). Further, the Project is approximately 2.8 miles from an on-ramp for SR 118. Due to the nature of Project operations, as well as the implementation of MM TRA-1, impacts resulting from Project VMT would be less than significant.

c) *Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?*

Less Than Significant Impact. The Project consists of a new warehouse facility with parking, landscaping, and other associated improvements. The Project does not include any hazardous design features such as sharp curves or dangerous intersections and is compatible with surrounding uses, which are mainly industrial. Impacts would be less than significant.

d) *Would the project result in inadequate emergency access?*

Less Than Significant Impact. The Project consists of a new warehouse facility with parking, landscaping, and other associated improvements. The Project's circulation system will be reviewed by the City's emergency response personnel and the City's Public Works Department to ensure that ingress and egress widths are sufficient and that the proposed circulation system would not interfere with an emergency response access route. Impacts would be less than significant.

4.18 TRIBAL CULTURAL RESOURCES

18.	**TRIBAL CULTURAL RESOURCES. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:**	**Potentially Significant Impact**	**Less than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
(a)	Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☒	☐
(b)	A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☒	☐

4.18.1 Impact Analysis

a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?

Less Than Significant Impact. The Proposed Project involves the construction of a new warehouse facility with offices on the western edge of the city. The Project site has not been developed, and the area surrounding the site is largely undeveloped with the exception of the Pentair facility immediately

west of the Project site. Incorporation of Conditions of Approval 3 and 4 impacts would be less than significant.

CA-3 Due to the potential that archaeological resources may be present on the Project site, the City of Moorpark shall require a note on any plans that require ground-disturbing excavation that there is a potential for exposing buried cultural resources, including prehistoric Native American artifacts. Construction personnel associated with earth-moving equipment, drilling, grading, and excavating, shall be provided with basic training conducted by a qualified archaeologist, to be retained and compensated by the development team, with the approval of the City of Moorpark. Issues that shall be included in the basic training will be geared toward training the applicable construction crews in the identification of archaeological deposits, further described below. Training will include written notification of the restrictions regarding disturbance and/or removal of any portion of archaeological deposits and the procedures to follow should a resource be identified. The construction contractor, or its designee, shall be responsible for implementation of this measure. A Native American monitor shall be provided an opportunity to attend the pre-construction briefing, upon request. ***A Native American monitor from a consulting Tribe under AB 52 monitor*** (***Fernandeño Tataviam Band of Mission Indians***) and a qualified archaeologist, to be compensated by the development team, shall be available on an "on-call" basis during ground-disturbing construction in native soil to review, identify, and evaluate cultural resources that may be inadvertently exposed during construction.

If archaeological remains or tribal cultural resources are uncovered, all construction activities within a ***100-foot radius*** shall be halted immediately until a qualified archaeologist, in consultation with the Native American monitor, shall evaluate whether the resource requires further study. The City shall require that the applicant include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. If any previously undiscovered resources are found during construction, the City of Moorpark Community Development Department shall be contacted; and the resource shall be evaluated for significance in terms of CEQA criteria by a qualified archaeologist. Prehistoric archaeological site indicators include but are not limited to: obsidian and chert flakes and chipped stone tools; grinding and mashing implements (e.g., slabs and handstones, and mortars and pestles); bedrock outcrops and boulders with mortar cups; and locally darkened midden soils. Midden soils may contain a combination of any of the previously listed items, with the possible addition of bone and shell remains, and fire-affected stones. Historic-period site indicators generally include but are not limited to: fragments of glass, ceramic, and metal objects; milled and split lumber; and structure and feature remains such as building foundations and discrete trash deposits (e.g., wells, privy pits, dumps). If the City and the qualified archaeologist determine the resource to be significant under CEQA, they shall determine whether preservation in place is feasible. Such preservation in place is the preferred mitigation. Contingency funding and a time allotment sufficient for recovering an archaeological sample or to employ an avoidance measure may be required. If such preservation is infeasible, the qualified archaeologist shall prepare and implement a formal Archaeological

Monitoring Plan (AMP) which will include a research design and archaeological data recovery plan for the resource. Development and implementation of the AMP will be determined by the City of Moorpark, and treatment of any significant cultural resources shall be undertaken with the approval of the Project Applicant and the City. The archaeologist shall also conduct appropriate technical analyses, prepare a comprehensive written report and file it with the appropriate information center (California Historical Resources Information System [CHRIS]), and provide for the permanent curation of the recovered materials. The City of Moorpark and/or development team shall, in good faith, consult with the ***Fernandeño Tataviam Band of Mission Indians*** and consulting Tribes on the disposition and treatment of any recovered materials. A Monitoring Closure Report shall be filed with the City of Moorpark at the conclusion of ground-disturbing construction if archaeological resources were encountered and/or recovered. After the find has been appropriately mitigated (as defined by State CEQA Guidelines Section 15126.4(b)), work in the area may resume.

CA-4 If human remains or funerary objects are unearthed during any activities associated with the Project, *State Health and Safety Code* Section 7050.5 requires that no further disturbance shall occur within a 100-foot buffer of the find until the County Coroner has made the necessary findings as to origin and disposition pursuant to *Public Resources Code* Section 5097.98. If the remains are determined to be of Native American descent, the Coroner has 24 hours to notify the Native American Heritage Commission (NAHC), the ***Fernandeño Tataviam Band of Mission Indians***, and consulting Tribes. The NAHC will then contact the deceased Native American's most likely descendant, who will then serve as consultant on how to proceed with the remains (i.e., avoid, rebury).

b) *Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?*

Less Than Significant Impact. As noted above, the Project site has not been developed and is located on the western edge of the City. As part of AB 52 consultation efforts, the City of Moorpark contacted tribes that had previously requested consultation and also requested a sacred lands file search from the Native American Heritage Commission (NAHC). As noted above, the NAHC responded that no records of tribal cultural resources were within the Project site. The City did receive one request for consultation from the Fernandeño Tataviam Band of Mission Indians, who asked for the results of the records search performed for the Project site. The Fernandeño Tataviam Band of Mission Indians continued to consult with the City through email and virtual meetings, with consultation concluding on April 25, 2022.

Based on the AB 52 consultation efforts, and in order to reduce potential impacts to tribal cultural resources (TCRs) to less than significant, additional Conditions of Approval would be implemented for the Proposed Project:

CA-4 Inadvertent Discovery of Human Remains. The inadvertent discovery of human remains is always a possibility during ground disturbances; State of California Health and Safety Code Section 7050.5 addresses these findings. This code section states that in the event human remains are uncovered, no further disturbance shall occur until the County Coroner has determined the origin and disposition of the remains pursuant to California Public Resources Code Section 5097.98. The Coroner must be notified of the find immediately, together with the City and the property owner. If the human remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). The MLD shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials and an appropriate reinternment site.

4.19 UTILITIES AND SERVICE SYSTEMS

19.	UTILITIES/SERVICE SYSTEMS. Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐
(b)	Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
(c)	Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
(d)	Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
(e)	Comply with federal, state, and local management and reduction statutes and regulations related to solid wastes?	☐	☐	☒	☐

4.19.1 Impact Analysis

a) Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or expansion of which could cause significant environmental effects?

Less Than Significant Impact. The Project consists of creation of a new warehouse and construction of a new parking lot. Utilities required for the Project already exist in the area and would be extended to the new facility. A new stormwater drainage and infiltration system will be constructed on site, but this system would be installed within previously disturbed soils on the Project site. In addition, BMPs will be implemented during construction in accordance with the Project's SWPPP; and the design of the stormwater infiltration system would be in accordance with Ventura County Stormwater Quality Management Program guidelines. Impacts would be less than significant.

b) Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal dry and multiple dry years?

Less Than Significant Impact. The Ventura County Water and Sanitation Department (VCWSD) operates and maintains water and wastewater infrastructure for the City, which is located in Ventura County Waterworks District (VCWWD) No. 1. VCWWD's water supply comes from both imported and local sources. In 2019, approximately 80 percent of VCWWD's total water supply came from the State Water Project. The State water originates in Northern California, where it is captured in reservoirs north of Sacramento and released into the Delta of the Sacramento and San Joaquin Rivers. It is transported via the 444-mile California Aqueduct to State Water Project contractors such as the Metropolitan Water District of Southern California (MWD). MWD then delivers the water to its 26-member public agencies, including Calleguas Municipal Water District (CMWD), Ventura County's regional wholesale purveyor and the VCWWD's direct supplier. CMWD water is conveyed through the Perliter Tunnel into Simi Valley, where it is distributed through the CMWD transmission system, stored in Lake Bard, or injected into the Fox Canyon aquifer (VCWWD 2021).

As discussed in Section 4.10, the Project site is located within the boundaries of the GSP for the Las Posas Valley Basin, which projects future water demands based on historic water availability and demand, as well as buildout of the General Plan (FCGMA 2007). The Project, once the CUP is approved, will be consistent with the zoning and land use of the Project site. Therefore, projected groundwater demands in the GSP generally take into account water demand from the Project. Additionally, Project operations on site would be substantially similar to adjacent operations, and water infrastructure on site would not change. Impacts would be less than significant.

c) Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Less Than Significant Impact. The VCWSD operates and maintains water and wastewater infrastructure for the City, which is located in VCWWD No. 1. The Moorpark Water Reclamation Facility (MWRF), located along SR 118 just west of the city of Moorpark, serves the Project site. The MWRF currently receives an average of 2.0 million gallons per day and is designed to treat up to 5 million gallons per day (mgd) (VCWWD 2021). Therefore, the MWRF has an available surplus capacity of approximately 3 million gallons per day, which is sufficient to support the Project. Furthermore,

Project operations on site would be substantially similar to adjacent operations, and wastewater infrastructure on site would not change. Impacts would be less than significant.

d) *Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?*

Less Than Significant Impact. The Project proposes to construct a 90,566-square-foot warehouse on currently undeveloped land; therefore, no demolition is required. In accordance with Moorpark Municipal Code Section 8.36, the Project would prepare a construction and demolition materials management plan that details how the Project will divert or recycle at least 65 percent of construction materials. Construction waste generated by the Project would be taken to a facility approved by the City for the diversion of construction and demolition materials within the County.

Solid waste resulting from the Project would be taken to the Simi Valley Landfill & Recycling Center (SVLRC) by a licensed contractor. According to the California Department of Resources Recycling and Recovery, SVLRC has a permitted daily throughput of 9,244 tons per day and a remaining capacity of 82,954,873 cubic yards (CalRecycle 2022). This is sufficient capacity for solid waste generated by the Project. Thus, impacts would be less than significant.

e) *Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?*

Less Than Significant Impact. The Project consists of creation of a new warehouse and associated utilities; therefore, no major demolition is anticipated for the Project. Project operations would receive raw materials, resulting in minimal waste. In accordance with Moorpark Municipal Code Section 8.36, the Project would prepare a construction and demolition materials management plan that details how the Project will divert or recycle at least 65 percent of construction and demolition material. Construction and demolition waste generated by the Project would be taken to a facility approved by the City for the diversion of construction and demolition materials within the County. Compliance with this section of the Municipal Code would align the Project with goals set forth in AB 939 and AB 341, which state the City must divert at least 50 percent of its annual waste and set a 75-percent recycling goal for California by 2020. Solid waste resulting from the Project would be taken to the SVLRC. According to the County's 2040 General Plan Environmental Impact Report, as of 2019 SVLRC has a permitted daily throughput of 9,250 tons per day and a remaining capacity of 88,300,000 cubic yards (County 2019). This is sufficient capacity for solid waste generated by the Project. Impacts would be less than significant.

4.20 WILDFIRE

20.	WILDFIRE. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
(b)	Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☒	☐

20.	**WILDFIRE.** **If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:**	**Potentially Significant Impact**	**Less than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
(c)	Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
(d)	Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☒	☐

4.20.1 Impact Analysis

a) Would the project impair an adopted emergency response plan or emergency evacuation plan?

Less Than Significant Impact. The Project is located within the LRA Very High Fire Severity Zone (VHFSZ) (CALFIRE 2022). As mentioned in Section 4.9 above, the City has developed an Emergency Services Program that includes City staff's receiving training in emergency preparedness, management, and mitigation; the City's maintaining the EOC; the City's organizing and training a Disaster Assistant Response Team composed of volunteers; and the City's promoting emergency planning, training, public awareness, and education (City 2001). Additionally, the County's MHMP includes an overview of the risk assessment process and identifies hazards present in the jurisdiction, hazard profiles, and vulnerability assessments. The plan also identifies goals, objectives, and actions for each jurisdiction in the County, including participating cities (such as Moorpark) and the County's unincorporated areas (County 2015). The Project would not interfere with the City's Emergency Services Program or the MHMP because it would not prohibit subsequent programs or plans from being established or prevent the goals and objectives of existing plans from being carried out. Thus, impacts would be less than significant.

b) Would the project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Less Than Significant Impact. Although the Project site is within the LRA VHFSZ, the Project is in an area with minimal elevation change and no steep slopes. Santa Ana Wind Events tend to occur in the months of August, September, and October; but typically winds in the area are relatively low (NOAA 1998). The Project borders vegetated open space on the south and north sides, but the adjacent warehouse building is set back from the parcel boundary and will be separated from the vegetation by parking lots, loading areas, and an approximately 30-foot-wide asphalt fire lane. These areas provide a minimum 100-foot buffer around the warehouse structure in compliance with the Ventura County Fire Department's Fire Hazard Reduction Program. Additionally, all construction would comply with the City's Building Code Section 15.08.060 Fire Hazard Zone Requirements and the County's Fire Protection Ordinance (City 2020c; County 2020b). Moreover, use of the Project site would be

substantially similar to the adjacent warehouse; therefore, Project operations would not exacerbate the risk of fire. Impacts would be less than significant.

c) *Would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?*

No Impact. The Project involves creation of a new warehouse building and construction of new parking lot. Although the Project is located within the LRA VHFSZ, use of the Project site would be substantially similar to the adjacent warehouse; and current infrastructure provides sufficient access to roads and utilities to satisfy the requirements for implementation of the Project. No impact would occur.

d) *Would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability or drainage changes?*

Less Than Significant Impact. The Project is located within the LRA VHFSZ. The Project site is flat and does not contain any slopes that pose a risk of landslide or slope instability. The Project site is within an area of minimal elevation change; therefore, the risk of downslope or downstream flooding at the Project site is low. Impacts would be less than significant.

4.21 MANDATORY FINDINGS OF SIGNIFICANCE

21.	MANDATORY FINDINGS OF SIGNIFICANCE.	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
(b)	Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects?)	☐	☐	☒	☐
(c)	Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

4.21.1 Impact Analysis

a) *Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?*

Less Than Significant with Mitigation Incorporated. The Project site is located on the western edge of the City of Moorpark in a more rural portion of the City and has been previously used for agricultural uses, but no development has occurred on site. As described in Section 4.4, Biological Resources, implementation of mitigation measure MM-BIO-1 would address potential impacts to nesting birds. As noted in Section 4.5, Cultural Resources, MM CUL-1 and MM CUL-2 would ensure that impacts to cultural resources encountered during construction are reduced to a level less than significant.

b) *Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects?)*

Less Than Significant Impact. The potential for cumulative impacts occurs when independent impacts of the Project are combined with the impact of related projects in proximity to the Project such that impacts occur that are greater than the impacts of the Project alone. As discussed throughout Sections 4.1 through 4.20, it has been determined that the Project would have no impact or impacts would be less than significant with or without mitigation measures with respect to environmental issues. Where the Project would have no impacts or a less than significant impact, it would not contribute to cumulative impacts.

Since the Proposed Project includes expansion of the existing Pentair facility, it has the potential to result in an increase in population due to the availability of new employment. However, the Project would likely pull from the existing employment pool in the City and would not induce unplanned population growth.

As noted in Section 4.8, the Proposed Project would generate 405.73 $MtCO_2e$ per year, which is within the 3,000 $MtCO_2e$ per year threshold. In addition, since the proposed structures will be required to meet the 2019 Title 24 Part 6 building standards and institute the water conservation measures that are detailed in the CALGreen Code, a less than significant generation of greenhouse gas emissions would occur from construction and operation of the Proposed Project.

According to the Project's TCS, the "Future Cumulative with Project" conditions were forecast based on the addition of traffic generated by the Project plus the addition of ambient traffic and completion and occupancy of related projects in the City. Application of the City's operations criteria to the "Future Cumulative with Project" scenario indicates that Project-related traffic is expected to exceed the traffic operations criteria at one of the twelve study intersections. Impacts would be reduced to a level less than significant by installing a new signalized intersection at Los Angeles Avenue and Montair Drive.

Cumulative impacts associated with the Proposed Project and identified related projects would be less than significant.

c) *Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?*

Less than Significant Impact with Mitigation Incorporated. Effects to human beings are generally associated with air quality, noise, traffic safety, geology/soils, and hazards/hazardous materials. As discussed in the previous environmental topic areas, the Project would not result in significant impacts to human beings because the Proposed Project would not cause significant impacts to air quality, noise, hazards, and traffic that would impact humans in the area. Implementation of mitigation measure MM TRA-1 would reduce impacts to traffic to less than significant. The new traffic signal would maintain acceptable levels of service. The impacts to human beings as a result of the Project would be less than significant with the mitigation incorporated for traffic impacts.

SECTION 5.0 – REFERENCES

The following is a list of references used in the preparation of this document.

California Air Resources Board (CARB)

2010 Climate Change Scoping Plan Implementation Updated. Available online at: https://ww3.arb.ca.gov/board/books/2010/042110/10-4-1pres.pdf.

2016 Target Scoping Plan Update. Available online at: https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/2030target_sp_dd120216.pdf.

2017 Scoping Plan Documents. Available online at: https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2017-scoping-plan-documents.

2018 California's Sustainable Communities and Climate Protection Act. Available online at: https://ww2.arb.ca.gov/sites/default/files/2018-11/Final2018Report_SB150_112618_02_Report.pdf.

California Department of Conservation (DOC)

2020a Important Farmland Finder. Accessed February 17, 2022. Available at: https://maps.conservation.ca.gov/DLRP/CIFF/.

2022b Earthquake Zones of Required Investigation. Accessed May 2022. Available online at: https://maps.conservation.ca.gov/cgs/EQZApp/app/.

2022c Geologic Map of California. Accessed May 2022. Available online at: https://maps.conservation.ca.gov/cgs/gmc/.

2022d Mines Online. Available online at: https://maps.conservation.ca.gov/mol/index.html.

California Department of Forestry and Fire Protection (CALFIRE).

2022 Fire Hazard Severity Zone. Available at: https://egis.fire.ca.gov/FHSZ/.

California Department of Resources Recycling and Recovery (CalRecycle)

2022 Simi Valley Landfill and Recycling Center. Available at: https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/608?siteID=3954.

California Department of Transportation (Caltrans)

2019 California State Scenic Highway System Map. Available at: https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aacaa.

California Energy Commission (CEC)

2018 California Retail Fuel Outlet Annual Reporting Results. Available online at: https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/california-retail-fuel-outlet-annual-reporting.

2021 Electricity Consumption by County. Available online at: http://www.ecdms.energy.ca.gov/elecbycounty.aspx.

2021 Gas Consumption by Entity. Available online at: http://www.ecdms.energy.ca.gov/gasbycounty.aspx.

City of Moorpark (City)

1986 Open Space, Conservation, and Recreation Element. Available at: https://moorparkca.gov/DocumentCenter/View/172/OSCAR-Element?bidId=.

1992 General Plan Circulation Element.

1998 General Plan Noise Element. Available at: https://www.moorparkca.gov/DocumentCenter/View/171/Noise-Element?bidId=.

2001 General Plan: Safety Element. Available online at: https://moorparkca.gov/DocumentCenter/View/173/Safety-Element?bidId=.

2008 Moorpark Zoning Map. Available at: https://moorparkca.gov/DocumentCenter/View/11472/Zoning-Map-updated-09222020?bidId=.

2012 Landscape Design Standards and Guidelines. Available online at: https://moorparkca.gov/DocumentCenter/View/46/Landscape-Standards-and-Guidelines?bidId=.

2020a Zoning Code, Chapter 17.30 Lighting Regulations. Accessed February 2022. Available online at: https://library.qcode.us/lib/moorpark_ca/pub/municipal_code/item/title_17-chapter_17_30.

2020b Moorpark General Plan Map. Available at: https://moorparkca.gov/DocumentCenter/View/11241/General-Plan_102920?bidId=.

2020c Emergency Management. Accessed August 2020. Available online at: https://moorparkca.gov/143/Emergency-Management.

2022 Municipal Code. Accessed April 2022. Available online at: https://qcode.us/codes/moorpark/.

County of Ventura (County)

2011 Ventura County Technical Guidance Manual for Stormwater Quality Control Measures. Available online at: http://www.vcstormwater.org/images/stories/NPDES_Documents/TGM/TGM_2018_Errata/Ventura-Technical-Guidance-Manual-Rev-06_29_18.pdf.

2015 Ventura County Multi-Hazard Mitigation Plan. Available online at: https://s29710.pcdn.co/wp-content/uploads/2018/05/ventura-hmp_main-body_september-2015.pdf. September 2015.

2019 2040 General Plan Environmental Impact Report. Available online at: https://docs.vcrma.org/images/pdf/planning/plans/VCGPU-EIR_4.17_Utilities.pdf

2020a Ventura County 2040 General Plan Update: Background Report. Available online at: https://vc2040.org/images/Draft_Background_Report_-_Jan._2020/PRDBR-AllChapters_Jan2020_compressed_VCGPUweb.pdf.

2020b Ventura County Fire Protection District Ordinance 31. Available online at: https://vcportal.ventura.org/CEO/COB/docs/VCFPD_Ordinance_28.pdf.

Federal Emergency Management Agency

2022 National Flood Hazard Layer FIRMette. Flood Map Service. Available online at: https://msc.fema.gov/portal/search?AddressQuery=moorpark%2C%20ca#searchresultsanchor

Fox Canyon Groundwater Management Agency (FCGMA)

2007 Update to the Fox Canyon Groundwater Management Agency Groundwater Management Plan. Available online at: http://www.fcgma.org/public-documents/plans/20-public-documents/plans/95-groundwater-management-plan.

Google Maps

2022 Google Maps. Accessed February 2022. Available online: https://earth.google.com/web/.

National Oceanic and Atmospheric Administration (NOAA)

1998 Annual Global Climate Report. National Centers for Environmental Information. https://www.ncdc.noaa.gov/sotc/global/199813.

Southern California Association of Governments (SCAG)

2020 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (Connect SoCal). Accessed May 2022. Available online at: https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocal-plan_0.pdf?1606001176.

Stantec

2022 Pentair Project Revised Traffic and Circulation Study. Prepared for the City of Moorpark April 6, 2022.

United States Department of Agriculture (USDA)

2022 Websoil Survey. Accessed May 2022. Available online at: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx.

Ventura County Air Pollution Control District (VCAPCD)

2003 *Ventura County Air Quality Assessment Guidelines* (prepared October 2003). Available online at: http://www.vcapcd.org/pubs/Planning/VCAQGuidelines.pdf.

2017 Final 2016 Ventura County Air Quality Management Plan. Available online at: http://www.vcapcd.org/pubs/Planning/AQMP/2016/Final/Final-2016-Ventura-County-AQMP.pdf

Ventura County Airport Land Use Commission (ALUC)

2000 Airport Comprehensive Land Use Plan Updated for Ventura County. Available online at: https://www.goventura.org/wp-content/uploads/2018/03/2000-airport-land-use-for-ventura-county.pdf.

Ventura County Public Works (VCPW)

2020 Water Service Areas. Available at: https://www.vcpublicworks.org/wsd/servicearea/

Ventura County Resource Management Agency (VCRMA)

2022 Correspondence with Ventura County regarding Historic Significance of Gabbert Channel. Emails dated June 2, 2022.

Ventura County Waterworks Districts (VCWWD)

2021 Urban Water Management Plan. 2020 Urban Water Management Plan. Available at: https://wuedata.water.ca.gov/public/uwmp_attachments/9460813224/VCWWD1_%20UWMP_Final_2020.pdf.

Western Regional Climate Center (WRCC)

2016 Period of Monthly Climate Summary for Thousand Oaks 1 SW, California (048904). Available online at: ttps://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca8904.

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Pentair Warehouse Expansion

Ventura County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	80.57	1000sqft	2.46	80,566.00	0
General Office Building	4.00	1000sqft	0.19	4,000.00	0
Parking Lot	3.00	Acre	3.00	130,680.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total project site = 5.65 acres

Construction Phase -

Vehicle Trips - Daily Trip Rates set to match TIA

Operational Off-Road Equipment - 4 Electric Powered Forklifts 8 hours per day

Water Mitigation - Install Low-Flow fixtures and Use Water-Efficient Irrigation Systems per Title 24 Requirements

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	PhaseEndDate	3/22/2024	12/29/2023
tblConstructionPhase	PhaseEndDate	1/26/2024	12/29/2023

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstructionPhase	PhaseEndDate	3/10/2023	2/10/2023
tblConstructionPhase	PhaseEndDate	2/23/2024	12/29/2023
tblConstructionPhase	PhaseEndDate	2/10/2023	1/13/2023
tblConstructionPhase	PhaseStartDate	2/24/2024	12/2/2023
tblConstructionPhase	PhaseStartDate	3/11/2023	2/11/2023
tblConstructionPhase	PhaseStartDate	2/11/2023	1/14/2023
tblConstructionPhase	PhaseStartDate	1/27/2024	12/2/2023
tblConstructionPhase	PhaseStartDate	1/28/2023	1/1/2023
tblLandUse	LotAcreage	1.85	2.46
tblLandUse	LotAcreage	0.09	0.19
tblOperationalOffRoadEquipment	OperFuelType	Diesel	Electrical
tblOperationalOffRoadEquipment	OperLoadFactor	0.20	0.20
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	4.00
tblVehicleTrips	ST_TR	2.21	14.50
tblVehicleTrips	ST_TR	1.74	1.84
tblVehicleTrips	SU_TR	0.70	14.50
tblVehicleTrips	SU_TR	1.74	1.84
tblVehicleTrips	WD_TR	9.74	14.50
tblVehicleTrips	WD_TR	1.74	1.84

2.0 Emissions Summary

Pentair Warehouse Expansion - Ventura County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	44.5923	27.5562	36.2686	0.0678	19.8049	1.2941	21.0717	10.1417	1.2112	11.3072	0.0000	6,629.9220	6,629.9220	1.3935	0.1283	6,702.9876
Maximum	**44.5923**	**27.5562**	**36.2686**	**0.0678**	**19.8049**	**1.2941**	**21.0717**	**10.1417**	**1.2112**	**11.3072**	**0.0000**	**6,629.9220**	**6,629.9220**	**1.3935**	**0.1283**	**6,702.9876**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	44.5923	27.5562	36.2686	0.0678	19.8049	1.2941	21.0717	10.1417	1.2112	11.3072	0.0000	6,629.9220	6,629.9220	1.3935	0.1283	6,702.9875
Maximum	**44.5923**	**27.5562**	**36.2686**	**0.0678**	**19.8049**	**1.2941**	**21.0717**	**10.1417**	**1.2112**	**11.3072**	**0.0000**	**6,629.9220**	**6,629.9220**	**1.3935**	**0.1283**	**6,702.9875**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Pentair Warehouse Expansion - Ventura County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.0816	8.0000e-005	8.9400e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0192	0.0192	5.0000e-005		0.0204
Energy	0.0103	0.0939	0.0789	5.6000e-004		7.1400e-003	7.1400e-003		7.1400e-003	7.1400e-003		112.6839	112.6839	2.1600e-003	2.0700e-003	113.3535
Mobile	0.6288	0.6832	5.5491	0.0116	1.2045	9.0600e-003	1.2135	0.3211	8.4600e-003	0.3296		1,188.1553	1,188.1553	0.0768	0.0528	1,205.7977
Offroad	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**2.7207**	**0.7772**	**5.6369**	**0.0121**	**1.2045**	**0.0162**	**1.2207**	**0.3211**	**0.0156**	**0.3367**	**0.0000**	**1,300.8583**	**1,300.8583**	**0.0790**	**0.0548**	**1,319.1717**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.0816	8.0000e-005	8.9400e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0192	0.0192	5.0000e-005		0.0204
Energy	0.0103	0.0939	0.0789	5.6000e-004		7.1400e-003	7.1400e-003		7.1400e-003	7.1400e-003		112.6839	112.6839	2.1600e-003	2.0700e-003	113.3535
Mobile	0.6288	0.6832	5.5491	0.0116	1.2045	9.0600e-003	1.2135	0.3211	8.4600e-003	0.3296		1,188.1553	1,188.1553	0.0768	0.0528	1,205.7977
Offroad	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**2.7207**	**0.7772**	**5.6369**	**0.0121**	**1.2045**	**0.0162**	**1.2207**	**0.3211**	**0.0156**	**0.3367**	**0.0000**	**1,300.8583**	**1,300.8583**	**0.0790**	**0.0548**	**1,319.1717**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2023	1/13/2023	5	10	
2	Grading	Grading	1/14/2023	2/10/2023	5	20	
3	Building Construction	Building Construction	2/11/2023	12/29/2023	5	230	
4	Paving	Paving	12/2/2023	12/29/2023	5	20	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5	Architectural Coating	Architectural Coating	12/2/2023	12/29/2023	5	20	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 20

Acres of Paving: 3

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 126,849; Non-Residential Outdoor: 42,283; Striped Parking Area: 7,841 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	7.00	231	0.29
Grading	Excavators	1	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	90.00	35.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647		3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**19.6570**	**1.2660**	**20.9230**	**10.1025**	**1.1647**	**11.2672**		**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0518	0.0320	0.4622	1.2600e-003	0.1479	8.0000e-004	0.1487	0.0392	7.4000e-004	0.0400		129.1227	129.1227	3.7900e-003	3.3700e-003	130.2224
Total	**0.0518**	**0.0320**	**0.4622**	**1.2600e-003**	**0.1479**	**8.0000e-004**	**0.1487**	**0.0392**	**7.4000e-004**	**0.0400**		**129.1227**	**129.1227**	**3.7900e-003**	**3.3700e-003**	**130.2224**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647	0.0000	3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**19.6570**	**1.2660**	**20.9230**	**10.1025**	**1.1647**	**11.2672**	**0.0000**	**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0518	0.0320	0.4622	1.2600e-003	0.1479	8.0000e-004	0.1487	0.0392	7.4000e-004	0.0400		129.1227	129.1227	3.7900e-003	3.3700e-003	130.2224
Total	**0.0518**	**0.0320**	**0.4622**	**1.2600e-003**	**0.1479**	**8.0000e-004**	**0.1487**	**0.0392**	**7.4000e-004**	**0.0400**		**129.1227**	**129.1227**	**3.7900e-003**	**3.3700e-003**	**130.2224**

3.3 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.7109	17.9359	14.7507	0.0297		0.7749	0.7749		0.7129	0.7129		2,872.6910	2,872.6910	0.9291		2,895.9182
Total	**1.7109**	**17.9359**	**14.7507**	**0.0297**	**7.0826**	**0.7749**	**7.8575**	**3.4247**	**0.7129**	**4.1377**		**2,872.6910**	**2,872.6910**	**0.9291**		**2,895.9182**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0432	0.0267	0.3851	1.0500e-003	0.1232	6.7000e-004	0.1239	0.0327	6.1000e-004	0.0333		107.6023	107.6023	3.1600e-003	2.8100e-003	108.5187
Total	**0.0432**	**0.0267**	**0.3851**	**1.0500e-003**	**0.1232**	**6.7000e-004**	**0.1239**	**0.0327**	**6.1000e-004**	**0.0333**		**107.6023**	**107.6023**	**3.1600e-003**	**2.8100e-003**	**108.5187**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.7109	17.9359	14.7507	0.0297		0.7749	0.7749		0.7129	0.7129	0.0000	2,872.6910	2,872.6910	0.9291		2,895.9182
Total	**1.7109**	**17.9359**	**14.7507**	**0.0297**	**7.0826**	**0.7749**	**7.8575**	**3.4247**	**0.7129**	**4.1377**	**0.0000**	**2,872.6910**	**2,872.6910**	**0.9291**		**2,895.9182**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0432	0.0267	0.3851	1.0500e-003	0.1232	6.7000e-004	0.1239	0.0327	6.1000e-004	0.0333		107.6023	107.6023	3.1600e-003	2.8100e-003	108.5187
Total	**0.0432**	**0.0267**	**0.3851**	**1.0500e-003**	**0.1232**	**6.7000e-004**	**0.1239**	**0.0327**	**6.1000e-004**	**0.0333**		**107.6023**	**107.6023**	**3.1600e-003**	**2.8100e-003**	**108.5187**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0347	1.3261	0.4711	6.4800e-003	0.2368	7.8800e-003	0.2447	0.0682	7.5400e-003	0.0757		703.3412	703.3412	0.0289	0.1052	735.4257
Worker	0.2590	0.1601	2.3108	6.3100e-003	0.7393	4.0100e-003	0.7433	0.1961	3.6900e-003	0.1998		645.6137	645.6137	0.0189	0.0169	651.1121
Total	**0.2937**	**1.4861**	**2.7819**	**0.0128**	**0.9762**	**0.0119**	**0.9881**	**0.2643**	**0.0112**	**0.2755**		**1,348.9549**	**1,348.9549**	**0.0479**	**0.1221**	**1,386.5378**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0347	1.3261	0.4711	6.4800e-003	0.2368	7.8800e-003	0.2447	0.0682	7.5400e-003	0.0757		703.3412	703.3412	0.0289	0.1052	735.4257
Worker	0.2590	0.1601	2.3108	6.3100e-003	0.7393	4.0100e-003	0.7433	0.1961	3.6900e-003	0.1998		645.6137	645.6137	0.0189	0.0169	651.1121
Total	**0.2937**	**1.4861**	**2.7819**	**0.0128**	**0.9762**	**0.0119**	**0.9881**	**0.2643**	**0.0112**	**0.2755**		**1,348.9549**	**1,348.9549**	**0.0479**	**0.1221**	**1,386.5378**

3.5 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.3930					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4257**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**		**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

Pentair Warehouse Expansion - Ventura County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0432	0.0267	0.3851	1.0500e-003	0.1232	6.7000e-004	0.1239	0.0327	6.1000e-004	0.0333		107.6023	107.6023	3.1600e-003	2.8100e-003	108.5187
Total	**0.0432**	**0.0267**	**0.3851**	**1.0500e-003**	**0.1232**	**6.7000e-004**	**0.1239**	**0.0327**	**6.1000e-004**	**0.0333**		**107.6023**	**107.6023**	**3.1600e-003**	**2.8100e-003**	**108.5187**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.3930					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4257**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**	**0.0000**	**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0432	0.0267	0.3851	1.0500e-003	0.1232	6.7000e-004	0.1239	0.0327	6.1000e-004	0.0333		107.6023	107.6023	3.1600e-003	2.8100e-003	108.5187
Total	**0.0432**	**0.0267**	**0.3851**	**1.0500e-003**	**0.1232**	**6.7000e-004**	**0.1239**	**0.0327**	**6.1000e-004**	**0.0333**		**107.6023**	**107.6023**	**3.1600e-003**	**2.8100e-003**	**108.5187**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	41.0135					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**41.2052**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0518	0.0320	0.4622	1.2600e-003	0.1479	8.0000e-004	0.1487	0.0392	7.4000e-004	0.0400		129.1227	129.1227	3.7900e-003	3.3700e-003	130.2224
Total	**0.0518**	**0.0320**	**0.4622**	**1.2600e-003**	**0.1479**	**8.0000e-004**	**0.1487**	**0.0392**	**7.4000e-004**	**0.0400**		**129.1227**	**129.1227**	**3.7900e-003**	**3.3700e-003**	**130.2224**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	41.0135					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**41.2052**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0518	0.0320	0.4622	1.2600e-003	0.1479	8.0000e-004	0.1487	0.0392	7.4000e-004	0.0400		129.1227	129.1227	3.7900e-003	3.3700e-003	130.2224
Total	**0.0518**	**0.0320**	**0.4622**	**1.2600e-003**	**0.1479**	**8.0000e-004**	**0.1487**	**0.0392**	**7.4000e-004**	**0.0400**		**129.1227**	**129.1227**	**3.7900e-003**	**3.3700e-003**	**130.2224**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.6288	0.6832	5.5491	0.0116	1.2045	9.0600e-003	1.2135	0.3211	8.4600e-003	0.3296		1,188.1553	1,188.1553	0.0768	0.0528	1,205.7977
Unmitigated	0.6288	0.6832	5.5491	0.0116	1.2045	9.0600e-003	1.2135	0.3211	8.4600e-003	0.3296		1,188.1553	1,188.1553	0.0768	0.0528	1,205.7977

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	58.00	58.00	58.00	138,606	138,606
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	148.24	148.24	148.24	432,793	432,793
Total	206.24	206.24	206.24	571,398	571,398

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.543528	0.058189	0.173108	0.133952	0.027894	0.007577	0.011427	0.006062	0.000688	0.000393	0.029232	0.000646	0.007304
Parking Lot	0.543528	0.058189	0.173108	0.133952	0.027894	0.007577	0.011427	0.006062	0.000688	0.000393	0.029232	0.000646	0.007304

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unrefrigerated Warehouse-No Rail	0.543528	0.058189	0.173108	0.133952	0.027894	0.007577	0.011427	0.006062	0.000688	0.000393	0.029232	0.000646	0.007304

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0103	0.0939	0.0789	5.6000e-004		7.1400e-003	7.1400e-003		7.1400e-003	7.1400e-003		112.6839	112.6839	2.1600e-003	2.0700e-003	113.3535
NaturalGas Unmitigated	0.0103	0.0939	0.0789	5.6000e-004		7.1400e-003	7.1400e-003		7.1400e-003	7.1400e-003		112.6839	112.6839	2.1600e-003	2.0700e-003	113.3535

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	99.1781	1.0700e-003	9.7200e-003	8.1700e-003	6.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004		11.6680	11.6680	2.2000e-004	2.1000e-004	11.7374
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	858.635	9.2600e-003	0.0842	0.0707	5.1000e-004		6.4000e-003	6.4000e-003		6.4000e-003	6.4000e-003		101.0159	101.0159	1.9400e-003	1.8500e-003	101.6162
Total		**0.0103**	**0.0939**	**0.0789**	**5.7000e-004**		**7.1400e-003**	**7.1400e-003**		**7.1400e-003**	**7.1400e-003**		**112.6839**	**112.6839**	**2.1600e-003**	**2.0600e-003**	**113.3535**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	0.0991781	1.0700e-003	9.7200e-003	8.1700e-003	6.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004		11.6680	11.6680	2.2000e-004	2.1000e-004	11.7374
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0.858635	9.2600e-003	0.0842	0.0707	5.1000e-004		6.4000e-003	6.4000e-003		6.4000e-003	6.4000e-003		101.0159	101.0159	1.9400e-003	1.8500e-003	101.6162
Total		**0.0103**	**0.0939**	**0.0789**	**5.7000e-004**		**7.1400e-003**	**7.1400e-003**		**7.1400e-003**	**7.1400e-003**		**112.6839**	**112.6839**	**2.1600e-003**	**2.0600e-003**	**113.3535**

6.0 Area Detail

6.1 Mitigation Measures Area

Pentair Warehouse Expansion - Ventura County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.0816	8.0000e-005	8.9400e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0192	0.0192	5.0000e-005		0.0204
Unmitigated	2.0816	8.0000e-005	8.9400e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0192	0.0192	5.0000e-005		0.0204

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2247					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.8560					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	8.3000e-004	8.0000e-005	8.9400e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0192	0.0192	5.0000e-005		0.0204
Total	**2.0816**	**8.0000e-005**	**8.9400e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**		**0.0192**	**0.0192**	**5.0000e-005**		**0.0204**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2247					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.8560					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	8.3000e-004	8.0000e-005	8.9400e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0192	0.0192	5.0000e-005		0.0204
Total	**2.0816**	**8.0000e-005**	**8.9400e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**		**0.0192**	**0.0192**	**5.0000e-005**		**0.0204**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Forklifts	4	8.00	260	89	0.20	Electrical

UnMitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	lb/day										lb/day					
Forklifts	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Pentair Warehouse Expansion - Ventura County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Pentair Warehouse Expansion

Ventura County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	80.57	1000sqft	2.46	80,566.00	0
General Office Building	4.00	1000sqft	0.19	4,000.00	0
Parking Lot	3.00	Acre	3.00	130,680.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total project site = 5.65 acres

Construction Phase -

Vehicle Trips - Daily Trip Rates set to match TIA

Operational Off-Road Equipment - 4 Electric Powered Forklifts 8 hours per day

Water Mitigation - Install Low-Flow fixtures and Use Water-Efficient Irrigation Systems per Title 24 Requirements

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	PhaseEndDate	3/22/2024	12/29/2023
tblConstructionPhase	PhaseEndDate	1/26/2024	12/29/2023

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstructionPhase	PhaseEndDate	3/10/2023	2/10/2023
tblConstructionPhase	PhaseEndDate	2/23/2024	12/29/2023
tblConstructionPhase	PhaseEndDate	2/10/2023	1/13/2023
tblConstructionPhase	PhaseStartDate	2/24/2024	12/2/2023
tblConstructionPhase	PhaseStartDate	3/11/2023	2/11/2023
tblConstructionPhase	PhaseStartDate	2/11/2023	1/14/2023
tblConstructionPhase	PhaseStartDate	1/27/2024	12/2/2023
tblConstructionPhase	PhaseStartDate	1/28/2023	1/1/2023
tblLandUse	LotAcreage	1.85	2.46
tblLandUse	LotAcreage	0.09	0.19
tblOperationalOffRoadEquipment	OperFuelType	Diesel	Electrical
tblOperationalOffRoadEquipment	OperLoadFactor	0.20	0.20
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	4.00
tblVehicleTrips	ST_TR	2.21	14.50
tblVehicleTrips	ST_TR	1.74	1.84
tblVehicleTrips	SU_TR	0.70	14.50
tblVehicleTrips	SU_TR	1.74	1.84
tblVehicleTrips	WD_TR	9.74	14.50
tblVehicleTrips	WD_TR	1.74	1.84

2.0 Emissions Summary

Pentair Warehouse Expansion - Ventura County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	44.6193	27.5617	36.2257	0.0675	19.8049	1.2942	21.0717	10.1417	1.2113	11.3072	0.0000	6,592.7477	6,592.7477	1.3957	0.1311	6,666.7048
Maximum	**44.6193**	**27.5617**	**36.2257**	**0.0675**	**19.8049**	**1.2942**	**21.0717**	**10.1417**	**1.2113**	**11.3072**	**0.0000**	**6,592.7477**	**6,592.7477**	**1.3957**	**0.1311**	**6,666.7048**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	44.6193	27.5617	36.2257	0.0675	19.8049	1.2942	21.0717	10.1417	1.2113	11.3072	0.0000	6,592.7477	6,592.7477	1.3957	0.1311	6,666.7048
Maximum	**44.6193**	**27.5617**	**36.2257**	**0.0675**	**19.8049**	**1.2942**	**21.0717**	**10.1417**	**1.2113**	**11.3072**	**0.0000**	**6,592.7477**	**6,592.7477**	**1.3957**	**0.1311**	**6,666.7048**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Pentair Warehouse Expansion - Ventura County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.0816	8.0000e-005	8.9400e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0192	0.0192	5.0000e-005		0.0204
Energy	0.0103	0.0939	0.0789	5.6000e-004		7.1400e-003	7.1400e-003		7.1400e-003	7.1400e-003		112.6839	112.6839	2.1600e-003	2.0700e-003	113.3535
Mobile	0.6134	0.7554	5.8661	0.0112	1.2045	9.0700e-003	1.2135	0.3211	8.4600e-003	0.3296		1,148.2379	1,148.2379	0.0833	0.0566	1,167.1811
Offroad	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**2.7053**	**0.8494**	**5.9539**	**0.0117**	**1.2045**	**0.0162**	**1.2207**	**0.3211**	**0.0156**	**0.3367**	**0.0000**	**1,260.9410**	**1,260.9410**	**0.0855**	**0.0587**	**1,280.5550**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.0816	8.0000e-005	8.9400e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0192	0.0192	5.0000e-005		0.0204
Energy	0.0103	0.0939	0.0789	5.6000e-004		7.1400e-003	7.1400e-003		7.1400e-003	7.1400e-003		112.6839	112.6839	2.1600e-003	2.0700e-003	113.3535
Mobile	0.6134	0.7554	5.8661	0.0112	1.2045	9.0700e-003	1.2135	0.3211	8.4600e-003	0.3296		1,148.2379	1,148.2379	0.0833	0.0566	1,167.1811
Offroad	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**2.7053**	**0.8494**	**5.9539**	**0.0117**	**1.2045**	**0.0162**	**1.2207**	**0.3211**	**0.0156**	**0.3367**	**0.0000**	**1,260.9410**	**1,260.9410**	**0.0855**	**0.0587**	**1,280.5550**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2023	1/13/2023	5	10	
2	Grading	Grading	1/14/2023	2/10/2023	5	20	
3	Building Construction	Building Construction	2/11/2023	12/29/2023	5	230	
4	Paving	Paving	12/2/2023	12/29/2023	5	20	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5	Architectural Coating	Architectural Coating	12/2/2023	12/29/2023	5	20	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 20

Acres of Paving: 3

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 126,849; Non-Residential Outdoor: 42,283; Striped Parking Area: 7,841 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	7.00	231	0.29
Grading	Excavators	1	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Pentair Warehouse Expansion - Ventura County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	90.00	35.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647		3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**19.6570**	**1.2660**	**20.9230**	**10.1025**	**1.1647**	**11.2672**		**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0559	0.0375	0.4537	1.2100e-003	0.1479	8.0000e-004	0.1487	0.0392	7.4000e-004	0.0400		123.5352	123.5352	4.1300e-003	3.7500e-003	124.7557
Total	**0.0559**	**0.0375**	**0.4537**	**1.2100e-003**	**0.1479**	**8.0000e-004**	**0.1487**	**0.0392**	**7.4000e-004**	**0.0400**		**123.5352**	**123.5352**	**4.1300e-003**	**3.7500e-003**	**124.7557**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647	0.0000	3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**19.6570**	**1.2660**	**20.9230**	**10.1025**	**1.1647**	**11.2672**	**0.0000**	**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0559	0.0375	0.4537	1.2100e-003	0.1479	8.0000e-004	0.1487	0.0392	7.4000e-004	0.0400		123.5352	123.5352	4.1300e-003	3.7500e-003	124.7557
Total	**0.0559**	**0.0375**	**0.4537**	**1.2100e-003**	**0.1479**	**8.0000e-004**	**0.1487**	**0.0392**	**7.4000e-004**	**0.0400**		**123.5352**	**123.5352**	**4.1300e-003**	**3.7500e-003**	**124.7557**

3.3 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.7109	17.9359	14.7507	0.0297		0.7749	0.7749		0.7129	0.7129		2,872.6910	2,872.6910	0.9291		2,895.9182
Total	**1.7109**	**17.9359**	**14.7507**	**0.0297**	**7.0826**	**0.7749**	**7.8575**	**3.4247**	**0.7129**	**4.1377**		**2,872.6910**	**2,872.6910**	**0.9291**		**2,895.9182**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0466	0.0312	0.3781	1.0100e-003	0.1232	6.7000e-004	0.1239	0.0327	6.1000e-004	0.0333		102.9460	102.9460	3.4400e-003	3.1200e-003	103.9631
Total	**0.0466**	**0.0312**	**0.3781**	**1.0100e-003**	**0.1232**	**6.7000e-004**	**0.1239**	**0.0327**	**6.1000e-004**	**0.0333**		**102.9460**	**102.9460**	**3.4400e-003**	**3.1200e-003**	**103.9631**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.7109	17.9359	14.7507	0.0297		0.7749	0.7749		0.7129	0.7129	0.0000	2,872.6910	2,872.6910	0.9291		2,895.9182
Total	**1.7109**	**17.9359**	**14.7507**	**0.0297**	**7.0826**	**0.7749**	**7.8575**	**3.4247**	**0.7129**	**4.1377**	**0.0000**	**2,872.6910**	**2,872.6910**	**0.9291**		**2,895.9182**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0466	0.0312	0.3781	1.0100e-003	0.1232	6.7000e-004	0.1239	0.0327	6.1000e-004	0.0333		102.9460	102.9460	3.4400e-003	3.1200e-003	103.9631
Total	**0.0466**	**0.0312**	**0.3781**	**1.0100e-003**	**0.1232**	**6.7000e-004**	**0.1239**	**0.0327**	**6.1000e-004**	**0.0333**		**102.9460**	**102.9460**	**3.4400e-003**	**3.1200e-003**	**103.9631**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0335	1.3845	0.4862	6.4900e-003	0.2368	7.9300e-003	0.2448	0.0682	7.5900e-003	0.0758		704.3483	704.3483	0.0288	0.1055	736.4991
Worker	0.2796	0.1874	2.2684	6.0400e-003	0.7393	4.0100e-003	0.7433	0.1961	3.6900e-003	0.1998		617.6761	617.6761	0.0206	0.0188	623.7783
Total	**0.3131**	**1.5719**	**2.7546**	**0.0125**	**0.9762**	**0.0119**	**0.9881**	**0.2643**	**0.0113**	**0.2755**		**1,322.0243**	**1,322.0243**	**0.0495**	**0.1242**	**1,360.2774**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0335	1.3845	0.4862	6.4900e-003	0.2368	7.9300e-003	0.2448	0.0682	7.5900e-003	0.0758		704.3483	704.3483	0.0288	0.1055	736.4991
Worker	0.2796	0.1874	2.2684	6.0400e-003	0.7393	4.0100e-003	0.7433	0.1961	3.6900e-003	0.1998		617.6761	617.6761	0.0206	0.0188	623.7783
Total	**0.3131**	**1.5719**	**2.7546**	**0.0125**	**0.9762**	**0.0119**	**0.9881**	**0.2643**	**0.0113**	**0.2755**		**1,322.0243**	**1,322.0243**	**0.0495**	**0.1242**	**1,360.2774**

3.5 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.3930					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4257**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**		**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

Pentair Warehouse Expansion - Ventura County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0466	0.0312	0.3781	1.0100e-003	0.1232	6.7000e-004	0.1239	0.0327	6.1000e-004	0.0333		102.9460	102.9460	3.4400e-003	3.1200e-003	103.9631
Total	**0.0466**	**0.0312**	**0.3781**	**1.0100e-003**	**0.1232**	**6.7000e-004**	**0.1239**	**0.0327**	**6.1000e-004**	**0.0333**		**102.9460**	**102.9460**	**3.4400e-003**	**3.1200e-003**	**103.9631**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.3930					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4257**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**	**0.0000**	**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0466	0.0312	0.3781	1.0100e-003	0.1232	6.7000e-004	0.1239	0.0327	6.1000e-004	0.0333		102.9460	102.9460	3.4400e-003	3.1200e-003	103.9631
Total	**0.0466**	**0.0312**	**0.3781**	**1.0100e-003**	**0.1232**	**6.7000e-004**	**0.1239**	**0.0327**	**6.1000e-004**	**0.0333**		**102.9460**	**102.9460**	**3.4400e-003**	**3.1200e-003**	**103.9631**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	41.0135					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**41.2052**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0559	0.0375	0.4537	1.2100e-003	0.1479	8.0000e-004	0.1487	0.0392	7.4000e-004	0.0400		123.5352	123.5352	4.1300e-003	3.7500e-003	124.7557
Total	**0.0559**	**0.0375**	**0.4537**	**1.2100e-003**	**0.1479**	**8.0000e-004**	**0.1487**	**0.0392**	**7.4000e-004**	**0.0400**		**123.5352**	**123.5352**	**4.1300e-003**	**3.7500e-003**	**124.7557**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	41.0135					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**41.2052**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0559	0.0375	0.4537	1.2100e-003	0.1479	8.0000e-004	0.1487	0.0392	7.4000e-004	0.0400		123.5352	123.5352	4.1300e-003	3.7500e-003	124.7557
Total	**0.0559**	**0.0375**	**0.4537**	**1.2100e-003**	**0.1479**	**8.0000e-004**	**0.1487**	**0.0392**	**7.4000e-004**	**0.0400**		**123.5352**	**123.5352**	**4.1300e-003**	**3.7500e-003**	**124.7557**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.6134	0.7554	5.8661	0.0112	1.2045	9.0700e-003	1.2135	0.3211	8.4600e-003	0.3296		1,148.2379	1,148.2379	0.0833	0.0566	1,167.1811
Unmitigated	0.6134	0.7554	5.8661	0.0112	1.2045	9.0700e-003	1.2135	0.3211	8.4600e-003	0.3296		1,148.2379	1,148.2379	0.0833	0.0566	1,167.1811

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	58.00	58.00	58.00	138,606	138,606
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	148.24	148.24	148.24	432,793	432,793
Total	206.24	206.24	206.24	571,398	571,398

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.543528	0.058189	0.173108	0.133952	0.027894	0.007577	0.011427	0.006062	0.000688	0.000393	0.029232	0.000646	0.007304
Parking Lot	0.543528	0.058189	0.173108	0.133952	0.027894	0.007577	0.011427	0.006062	0.000688	0.000393	0.029232	0.000646	0.007304

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unrefrigerated Warehouse-No Rail	0.543528	0.058189	0.173108	0.133952	0.027894	0.007577	0.011427	0.006062	0.000688	0.000393	0.029232	0.000646	0.007304

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0103	0.0939	0.0789	5.6000e-004		7.1400e-003	7.1400e-003		7.1400e-003	7.1400e-003		112.6839	112.6839	2.1600e-003	2.0700e-003	113.3535
NaturalGas Unmitigated	0.0103	0.0939	0.0789	5.6000e-004		7.1400e-003	7.1400e-003		7.1400e-003	7.1400e-003		112.6839	112.6839	2.1600e-003	2.0700e-003	113.3535

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	99.1781	1.0700e-003	9.7200e-003	8.1700e-003	6.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004		11.6680	11.6680	2.2000e-004	2.1000e-004	11.7374
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	858.635	9.2600e-003	0.0842	0.0707	5.1000e-004		6.4000e-003	6.4000e-003		6.4000e-003	6.4000e-003		101.0159	101.0159	1.9400e-003	1.8500e-003	101.6162
Total		**0.0103**	**0.0939**	**0.0789**	**5.7000e-004**		**7.1400e-003**	**7.1400e-003**		**7.1400e-003**	**7.1400e-003**		**112.6839**	**112.6839**	**2.1600e-003**	**2.0600e-003**	**113.3535**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	0.0991781	1.0700e-003	9.7200e-003	8.1700e-003	6.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004		11.6680	11.6680	2.2000e-004	2.1000e-004	11.7374
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0.858635	9.2600e-003	0.0842	0.0707	5.1000e-004		6.4000e-003	6.4000e-003		6.4000e-003	6.4000e-003		101.0159	101.0159	1.9400e-003	1.8500e-003	101.6162
Total		**0.0103**	**0.0939**	**0.0789**	**5.7000e-004**		**7.1400e-003**	**7.1400e-003**		**7.1400e-003**	**7.1400e-003**		**112.6839**	**112.6839**	**2.1600e-003**	**2.0600e-003**	**113.3535**

6.0 Area Detail

6.1 Mitigation Measures Area

Pentair Warehouse Expansion - Ventura County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.0816	8.0000e-005	8.9400e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0192	0.0192	5.0000e-005		0.0204
Unmitigated	2.0816	8.0000e-005	8.9400e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0192	0.0192	5.0000e-005		0.0204

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2247					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.8560					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	8.3000e-004	8.0000e-005	8.9400e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0192	0.0192	5.0000e-005		0.0204
Total	**2.0816**	**8.0000e-005**	**8.9400e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**		**0.0192**	**0.0192**	**5.0000e-005**		**0.0204**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2247					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.8560					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	8.3000e-004	8.0000e-005	8.9400e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0192	0.0192	5.0000e-005		0.0204
Total	**2.0816**	**8.0000e-005**	**8.9400e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**		**0.0192**	**0.0192**	**5.0000e-005**		**0.0204**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Forklifts	4	8.00	260	89	0.20	Electrical

UnMitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	lb/day										lb/day					
Forklifts	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

June 3, 2022
5 Hutton Centre Drive, Suite 750
Santa Ana, California 92707

City of Moorpark
799 Moorpark Avenue
Moorpark, California 93021

Subject: Biological Resources Reconnaissance Assessment for the Pentair Expansion Project

Chambers Group, Inc. (Chambers Group) was retained by the City of Moorpark (City) to conduct a literature review and biological reconnaissance-level survey for the Pentair Expansion Project (Project). The purpose of this survey was to document existing vegetation communities, identify special status species with a potential for occurrence, and map habitats that could support special status wildlife species as well as evaluate potential impacts of the Project to these resources.

Project Site Location and Description

The approximately 5.65-acre Project site is located in the undeveloped lot directly east of Pentair Pool Products, located at 10951 Los Angeles Ave., within the City of Moorpark, Los Angeles County, California. South of the Project site, across East Los Angeles Ave., is Muranaka Farm. To the east the Project site is bordered by a vacant vegetated lot, and to the north across the train tracks is a citrus orchard. The elevation at the Project site is approximately 440 feet above mean sea level (amsl). Maps of the Project Location and Project Vicinity are provided in Attachment 1: Figure 1.

The proposed Project is the development of a 90,566 square-foot industrial building for Pentair Pool Products. Of this total square footage, 3,000 square feet is planned for office space and 87,566 square feet for warehousing. Pentair is proposing 21 truck-loading spaces with 3 grade-level doors. and will include 185 parking spaces. The site will also include onsite underground storm drain chambers for retention of rainwater. Primary vehicular access to the Project site will be provided through Montair Drive, which is an existing 30-foot to 40-foot wide easement across the Pentair site directly to the northwest corner of the Project site. Montair Drive connects to Los Angeles Avenue via an existing intersection with turn lanes in each direction. Secondary (emergency) vehicular access to the Project site will be provided via a new 35-foot wide access road spanning the S Gabbert Canal as a driveway off Los Angeles Avenue that would provide both truck and vehicle access. In addition, the Project will involve improvements to the channel for approximately 60 linear feet.

Methods

The Survey Area encompasses the Project Site which includes the entirety of the 5.65-acre parcel.

Literature Review

Prior to performing the biological reconnaissance survey, Chambers Group staff conducted a literature review for soils, jurisdictional water features that contribute to hydrology, and special status species known to occur within the vicinity (approximately 5 miles) of the Survey Area.

Soils

Prior to performing the biological reconnaissance survey, soil maps for the Survey Area were referenced in accordance with categories set forth by the U.S. Department of Agriculture (USDA) Soil Conservation Service and the USDA Natural Resources Conservation Service (NRCS) Web Soil Survey (USDA 2022).

Hydrology

A general assessment of waters potentially regulated by the U.S. Army Corps of Engineers (USACE), California Regional Water Quality Control Board (RWQCB), and California Department of Fish and Wildlife (CDFW) was conducted for the Survey Area. Pursuant to Section 404 of the Clean Water Act, USACE regulates the discharge of dredged and/or fill material into waters of the United States. The State of California (State) regulates discharge of material into waters of the State pursuant to Section 401 of the Clean Water Act and the California Porter-Cologne Water Quality Control Act (California Water Code, Division 7, §13000 et seq.). Pursuant to Division 2, Chapter 6, Sections 1600-1602 of the California Fish and Wildlife (CDFW) Code, CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake, which supports fish or wildlife. A desktop assessment was conducted of available data prior to the biological reconnaissance survey in the field.

Special Status Habitats and Species

The most recent records of the California Natural Diversity Database (CNDDB) managed by CDFW (2021) and the California Native Plant Society's Electronic Inventory (CNPSEI) of Rare and Endangered Vascular Plants of California (CNPS 2021) were reviewed for the following quadrangles containing and surrounding the Project: *Piru, Fillmore, Simi, Moorpark, Santa Paula Peak, Santa Paula, Thousand Oaks, Camarillo,* and *Newbury Park,* California U.S. Geological Survey (USGS) 7.5-minute quadrangles. These databases contain records of reported occurrences of federally or State-listed endangered or threatened species, California Species of Concern (SSC), or otherwise special status species or habitats that may occur within or in the immediate vicinity of the Survey Area.

Biological Reconnaissance Survey

The biological reconnaissance survey was conducted on foot within the Survey Area. During the survey, the biologists identified and mapped all vegetation communities found within the Survey Area onto aerial photographs (Figure 2). Plant communities were determined in accordance with the *Manual of California Vegetation*, *Second Edition* (Sawyer et al. 2009). Plant nomenclature follows that of *The Jepson Manual*, *Vascular Plants of California, Second Edition* (Baldwin et al. 2012). Plant and wildlife species observed or detected within the Survey Area were recorded (Attachments 2 and 3) Site photographs were taken depicting current site conditions (Attachment 4).

Results

Chambers Group biologists Heather Franklin and Jessica Calvillo conducted the biological reconnaissance survey within the Survey Area to identify vegetation communities, the potential for occurrence of special status species, and/or habitats that could support special status wildlife species. The survey was conducted on foot between 1030 and 1230 hours on December 16, 2021. Weather conditions during the survey included temperatures ranging from 47 to 53 degrees Fahrenheit, wind speeds between 2 and 5 mile per hour, with 90 percent cloud cover, and no precipitation.

Biological Site Conditions

Soils

According to the results from the USDA NRCS Web Soil Survey (USDA 2022), the Project Site is located in the Ventura, CA674 area of the soil map. Three soil types are known to occur within and/or adjacent to the site (Figure 3). These soil types are described below.

- Metz Loamy Sand 2 to 9 percent slopes occurs throughput the majority of the Survey Area. The parent material is stratified alluvium derived from sedimentary rock. The available water storage is classified as low (approximately 5.3 inches) with a depth to the water table of more than 80 inches (USDA 2022).
- Sandy Alluvial Land occurs in the northeastern portion of the Survey Area. The parent material is alluvium. The available water storage is classified as low (approximately 4.7 inches) with a depth to the water table of more than 80 inches (USDA 2022).

- Pico Sandy Loam 0 to 2 percent slopes occurs in a small section near the southwest portion of the Survey Area. The parent material is alluvium derived from stratified rock. The available water storage is classified as moderate (approximately 7.2 inches) with a depth to water table of more than 80 inches (USDA 2022).

Hydrology

A cement-lined channel flows along the southern boundary of the site. The National Hydrology Database (NHD) identifies the channel as a canal/ditch and it appears the channel receives flow primarily from agricultural run-off and nuisance water from the nearby agricultural and commercial properties. The channel flows west and connects to another cement-lined channel southwest of the Project site, which flows south and terminates in the Arroyo Simi River, a NWI mapped blue line (Figure 4) stream. The Arroyo Simi flows southwest and terminates in the Pacific Ocean, a Traditional Navigable Water (TNW). The Project proposes a new access road over the cement-lined channel for emergency access and will include improvements to this section of the channel for approximately 60 linear feet. Typically, canals or ditches that receive flow primarily from agricultural sources are not considered waters of the United States; therefore, no impacts to waters of the United States are anticipated as a result of this Project. However, the channel is jurisdictional under RWQCB; therefore, impacts to waters of the State may occur as a result of this Project (Figure 5).

Vegetation Communities

Disturbed and Developed vegetation communities were found within the Survey Area during the biological reconnaissance survey. The majority of the Project site is comprised of Disturbed vegetation. The communities are described in the following subsections.

Disturbed

Disturbed areas are those areas that are either devoid of vegetation (cleared or graded) such as dirt roads or those areas that have been disturbed by human use. Soils are compacted and support little to no vegetation or may contain species such as tocalote (*Centaurea melitensis*), wild oat (*Avena* sp.), mustard species, prickly sow thistle (*Sonchus asper*), and prickly lettuce (*Lactuca serriola*) (Gray and Bramlet 1992).

Disturbed area is present within 5.32 acres of the survey area comprising the greater majority of the Project site. This area is mainly devoid of vegetation, shows signs of regular mowing, and contains scattered nonnative vegetation, including poison hemlock (*Conium maculatum*), shortpod mustard (*Hirschfeldia incana*), castor-bean (*Ricinus communis*), broad-lobed filaree (*Erodium botrys*), red-stemmed filaree (*Erodium cicutarium*), and cheeseweed (*Malva parviflora*). Native plant species found on site in smaller numbers included white sage (*Salvia apiana*), telegraphweed (*Heterotheca grandiflora*), scalebroom (*Lepidospartum squamatum*), and twiggy wreathplant (*Stephanomeria virgata*).

Developed

Developed areas are areas that have been altered by humans and now display man-made structures such as urban areas, houses, paved roads, buildings, parks, and other maintained areas (Gray and Bramlet 1992). Developed areas are present within 0.27 acre of the Project site at the southern end within a cement channel.

General Plants

A total of 20 plant species were observed within the Survey Area during the biological reconnaissance survey (Attachment 2). Plant species observed during the survey were representative of the existing Survey Area conditions. No special status plant species were observed during the survey.

General Wildlife

A total of seven wildlife species were observed within the Survey Area during the biological reconnaissance survey. Wildlife species observed or detected during the survey were characteristic of the existing Survey Area conditions. A

complete list of wildlife species observed or detected is provided in Attachment 3 – Wildlife Species Observed/Detected List.

Sensitive Species

Special Status Species

The following information is a list of abbreviations used to help determine special status biological resources potentially occurring in the Survey Area.

CNPS California Rare Plant Rank (CRPR)

1A	=	Plants presumed extinct in California.
1B	=	Plants rare and endangered in California and throughout their range.
2	=	Plants rare, threatened or endangered in California but more common elsewhere in their range.
3	=	Plants about which we need more information, a review list.
4	=	Plants of limited distribution; a watch list.

CRPR Extensions

0.1	=	Seriously endangered in California (greater than 80 percent of occurrences threatened/high degree and immediacy of threat).
0.2	=	Fairly endangered in California (20 to 80 percent occurrences threatened).
0.3	=	Not very endangered in California (less than 20 percent of occurrences threatened).

Federal

FE	=	Federally listed; Endangered
FT	=	Federally listed; Threatened

State

ST	=	State listed; Threatened
SE	=	State listed; Endangered
RARE	=	State listed; Rare (Listed “Rare” animals have been re-designated as Threatened, but Rare plants have retained the Rare designation.)
SSC	=	State Species of Special Concern
WL	=	CDFW Watch List
FP	=	CDFW Fully Protected

The following information was used to determine biological resources potentially occurring within the Survey Area. The criteria used to evaluate the potential for special status species to occur within the Survey Area are outlined in Table 1.

Table 1: Criteria for Evaluating Special Status Species Potential for Occurrence (PFO)

PFO*	CRITERIA
Absent:	Species is restricted to habitats or environmental conditions that do not occur within the Project site.
Low:	Historical records for this species do not exist within the vicinity (approximately 5 miles) of the Project site, and/or habitats or environmental conditions needed to support the species are of poor quality.
Moderate:	Either a historical record exists of the species within the vicinity of the Project site (approximately 5 miles) and marginal habitat exists on the Survey Area, or the habitat requirements or environmental conditions associated with the species occur within the Survey Area, but no historical records exist within 5 miles of the Project site.
High:	Both a historical record exists of the species within the Survey Area or its immediate vicinity (approximately 1 mile), and the habitat requirements and environmental conditions associated with the species occur within the Survey Area.
Present:	Species was detected within the Survey Area at the time of the survey.

*PFO: Potential for Occurrence

Special Status Plant Species

Database searches (CDFW 2021; CNPS 2021) resulted in a list of 9 federally and/or state-listed threatened, endangered, or otherwise special status plant species documented to historically occur within the vicinity of the Survey Area (Figure 6). Of the 9 plant species that resulted from the database search all plant species are considered absent from the Survey Area. No special status plant species were found during the biological reconnaissance survey.

The following 9 plant species are considered **Absent** from the Survey Area due to lack of suitable habitat or because they grow outside the elevation range of the Survey Area:

- Braunton's milk-vetch (*Astragalus brauntonii*) – FE, CRPR 1B.1
- Santa Susana tarplant (*Deinandra minthornii*) – RARE, CRPR 1B.2
- Agoura Hills dudleya (*Dudleya cymosa* subsp. *agourensis*) – FT, CRPR 1B.2
- marcescent dudleya (*Dudleya cymosa* subsp. *marcescens*) – FT, RARE, CRPR 1B.2
- Conejo dudleya (*Dudleya parva*) – FT, CRPR 1B.2
- Verity's dudleya (*Dudleya verity*) – FT, CRPR 1B.1
- conejo buckwheat (*Eriogonum crocatum*) – RARE, CRPR 1B.2
- California Orcutt grass (*Orcuttia californica*) – FE, SE, CRPR 1B.1
- Lyon's pentachaeta (*Pentachaeta lyonia*) – FE, SE, CRPR 1B.1

Special Status Wildlife Species

Database searches (CDFW 2022; USFWS 2022) resulted in a list of 29 federally and/or state listed endangered or threatened, State Species of Concern, or otherwise special status wildlife species documented to occur within the

Survey Area (Figure 5). After a literature review and the assessment of the various habitat types within the Survey Area, it was determined that all 29 special status wildlife species are considered absent from the Project site.

The following 29 wildlife species are considered **Absent** from the Survey Area due to the absence of suitable habitat:

- American badger (*Taxidea taxus*) – SSC
- arroyo chub (*Gila orcuttii*) – SSC
- burrowing owl (*Athene cunicularia*) – SSC
- bank swallow (*Riparia riparia*) – **ST**
- California condor (*Gymnogyps californianus*) – **FE**, **SE**
- California glossy snake (*Arizona elegans occidentalis*) – SSC
- coast horned lizard (*Phrynosoma blainvillii*) – SSC
- coast patch-nosed snake (*Salvadora hexalepis virgultea*) – SSC
- coastal California gnatcatcher (*Polioptila californica californica*) – FT, SSC
- coastal whiptail (*Aspidoscelis tigris stejnegeri*) – SSC
- foothill yellow-legged frog (*Rana boylii*) – **SE**
- least Bell's vireo (*Vireo bellii pusillus*) – FE, SE
- pallid bat (*Antrozous pallidus*) – SSC
- Riverside fairy shrimp (*Streptocephalus woottoni*) – **FE**
- San Diego desert woodrat (*Neotoma lepida intermedia*) – SSC
- Santa Ana sucker (*Catostomus santaanae*) – FT
- southcoast gartersnake (*Thamnophis sirtalis* pop. 1) – SSC
- southern California legless lizard (*Anniella stebbinsi*) – SSC
- southwestern willow flycatcher (*Empidonax traillii extimus*) – FE, SE
- steelehead – Southern California DPS (*Oncorhynchus mykiss irideus* pop. 10) – **FE**
- tricolored blackbird (*Agelaius tricolor*) – ST
- two-striped gartersnake (*Thamnophis hammondii*) – SSC
- unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*) – FE, SE
- western mastiff bat (*Eumops perotis californicus*) – SSC
- western pond turtle (*Emys marmorata*) – SSC
- western spadefoot (*Spea hammondii*) – SSC
- western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) – FT, SE
- yellow warbler (*Setophaga petechia*) – SSC

United States Fish Wildlife Service Critical Habitat

USFWS Critical Habitat is defined as areas of land, water, and air space containing the physical and biological features essential for the survival and recovery of endangered and threatened species. Designated Critical Habitat includes sites for breeding and rearing, movement or migration, feeding, roosting, cover, and shelter. Designated Critical Habitats require special management and protection of existing resources, including water quality and quantity, host animals and plants, food availability, pollinators, sunlight, and specific soil types. Designated Critical Habitat delineates all suitable habitat, occupied or not, that is essential to the survival and recovery of the species. According to the USFWS

Critical Habitat WebGIS map, the Project site does not fall within any designated Critical Habitat (USFWS 2022) andno designated Critical Habitat occurs within three miles of the Project site.

Conclusions and Recommendations

Hydrology

A cement-lined channel flows through the southern portion of the Project site, which eventually connects to the Arroyo Simi and terminates in the Pacific Ocean, a TNW. Proposed construction includes the placement of an access road over the channel and improvements to approximately 60 feet of the channel within the same section. A total of 0.02 acre of permanent impacts to waters of the State will occur as a result of the Project; thus, a State 401 certification, and/or CDFW State Streambed Alteration Agreement may be required for Project authorization.

Special Status Plant Species

Following the literature review and after the assessment of the various habitat types in the Survey Area, it was determined that of the 9 special status plant species known to historically occur within the Survey Area, all species were considered absent within the Survey Area. No special status species were found during the biological reconnaissance survey.

Special Status Wildlife Species

Following the literature review and the assessment of the various habitat types in the Survey Area, it was determined that of the 29 special status wildlife species known to occur within the Project site, all species are considered absent from the site. Therefore, no additional surveys are recommended at this time.

To minimize potential impacts to nesting birds protected under the Migratory Bird Treaty Act (MBTA), construction activities should take place outside nesting season (February 1 to August 31), to the greatest extent practicable.

If construction activities occur during nesting season, preconstruction nesting bird surveys should be conducted. The survey should occur prior to initiation of ground disturbing activities, and any occupied passerine and/or raptor nests occurring within or adjacent to the impact area should be delineated. Additional follow-up surveys may be required by the resource agencies. To the maximum extent practicable, a minimum buffer zone around occupied nests should be determined by the qualified biologist to avoid impacts to the active nest. The buffer should be maintained during physical ground-disturbing activities. Once nesting has ceased, the buffer may be removed.

Please contact me at (949) 261-5414 ext. 7232 if you have any questions or concerns regarding this memo report.

Sincerely,

CHAMBERS GROUP, INC.

Heather Franklin

Senior Biologist
hfranklin@chambersgroupinc.com
(949) 261-5414 ext. 7232

Attachments

Attachment 1: Figure 1 – Project Location and Vicinity Map
Figure 2 – Vegetation Communities Map
Figure 3 – USDA Soils Map

Figure 4 – Jurisdictional Waters Map
Figure 5 – Jurisdictional Delineation Results Map
Figure 6 – CNDDB and USFWS Occurrences and Critical Habitat Map

Attachment 2: Plant Species Observed

Attachment 3: Wildlife Species Observed/Detected

Attachment 4: Site Photographs

References

Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, and T.J. Rosatti, and D.H. Wilken (editors)

2012 *The Jepson Manual: Vascular Plants of California, Second Edition.* University of California Press, Berkeley, CA.

Barbour et al. 1999

1999 *Terrestrial Plant Ecology*, Third Edition. Addison Wesley Longman, Inc. Menlo Park, California.

California Department of Fish and Wildlife (CDFW)

2021 California Natural Diversity Database (CNDDB). RareFind Version 5. Database Query for the *Piru, Fillmore, Simi, Moorpark, Santa Paula Peak, Santa Paula, Thousand Oaks, Camarillo, Newbury Park,* California USGS 7.5-minute quadrangles. Wildlife and Habitat Data Analysis Branch.

California Native Plant Society (CNPS)

2021 Inventory of Rare and Endangered Plants (online edition). Rare Plant Scientific Advisory Committee, California Native Plant Society, Sacramento, California. Accessed December 2021 from http://www.cnps.org/inventory for the *Piru, Fillmore, Simi, Moorpark, Santa Paula Peak, Santa Paula, Thousand Oaks, Camarillo, Newbury Park,* California USGS 7.5-minute quadrangles.

Gray, J. and D. Bramlet

1992 *Habitat Classification System, Natural Resources, Geographic Information System (GIS) Project*. County of Orange Environmental Management Agency, Santa Ana, CA.

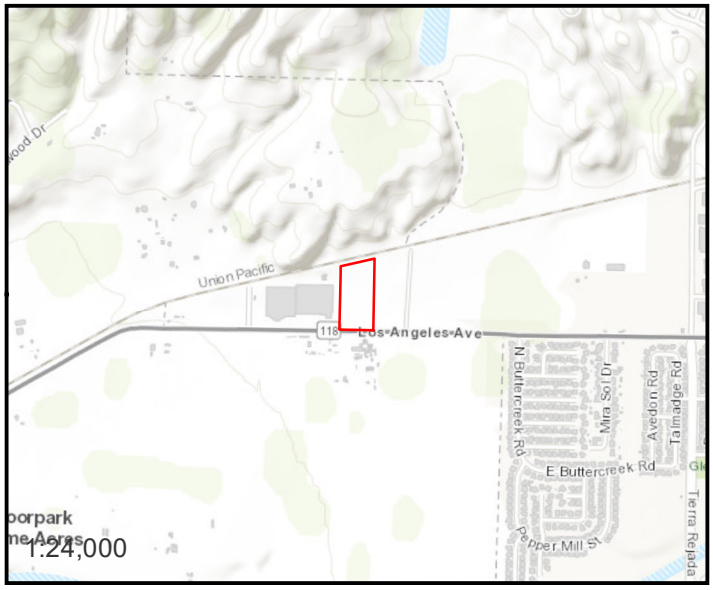
Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens

2009 *A Manual of* California *Vegetation Second Edition*. California Native Plant Society, Sacramento, California.

United States Department of Agriculture (USDA)

2021 Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Official Soil Series Descriptions Accessed December 2021 from https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx.

ATTACHMENT 1 – FIGURES







Project Location

Figure 1
Pentair Expansion CEQA
Project Location and Vicinity

N

0 100 200 400

Feet

Name: 21321 BIO Fig 1 Project Site Location and Vicinity.Mxd
Print Date: 11/9/2021 11:20:36 AM Author: pcarlos

CHAMBERS GROUP



Project Location

Vegetation Communities

Disturbed (5.32 ac)

Developed (0.27 ac)

N

0 40 80 160

Feet

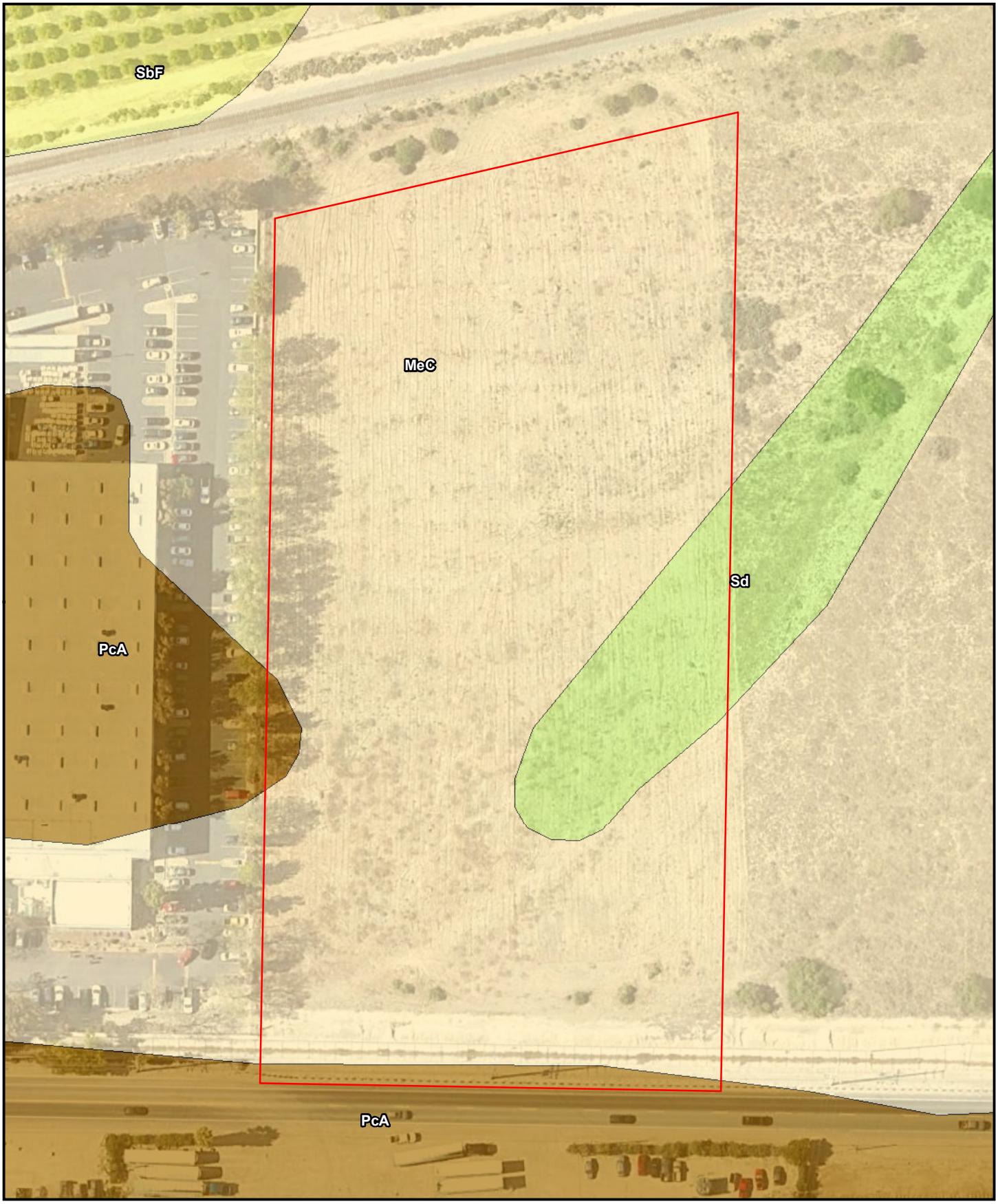
Figure 2

Pentair Expansion Project

Vegetation Communities

Name: 21321 BIO Fig 2 Vegetation Communities.Mxd
Print Date: 12/23/2021 2:49:22 PM Author: pcarlos

CHAMBERS GROUP



Project Location

USDA Soil Type

- MeC - Metz loamy sand, 2 to 9 percent slopes
- PcA - Pico sandy loam, 0 to 2 percent slopes
- SbF - San Andreas sandy loam, 30 to 50 percent slopes
- Sd - Sandy alluvial land

N

0 30 60 120

Feet

Figure 3
Pentair Expansion Project
USDA Soils

Name: 21321 BIO Fig 3 USDA Soils.Mxd
Print Date: 4/4/2022 11:59:04 AM Author: pcarlos

CHAMBERS GROUP

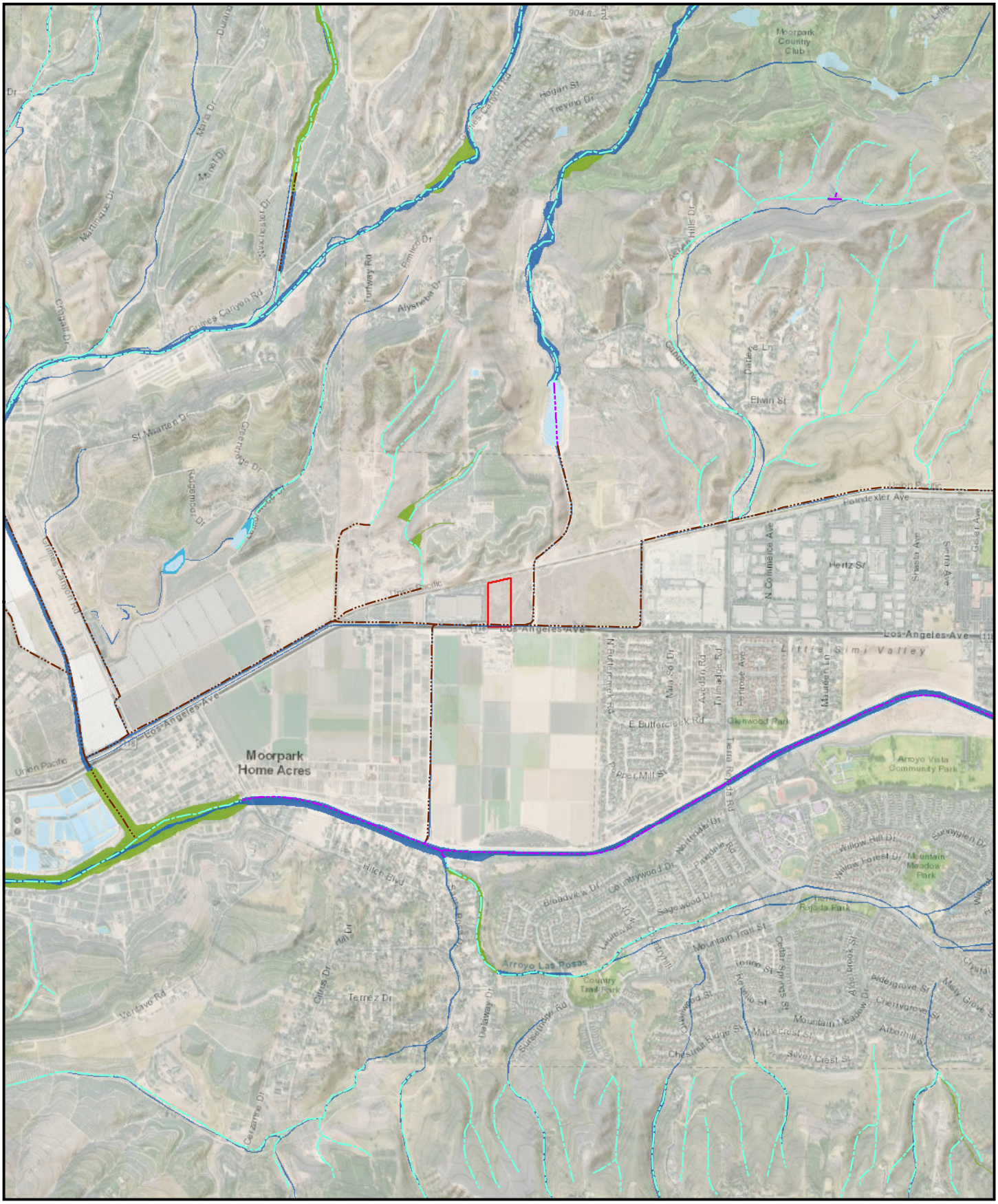


Figure 4
Pentair Expansion Project
Jurisdictional Waters

Name: 21321 BIO Fig 4 Jurisdictional Waters.Mxd
Print Date: 4/4/2022 1:54:50 PM Author: pcarlos

CHAMBERS GROUP



Project Location
Channel Improvement Impacts

Jurisdictional Delineation Results

Ordinary High Water Mark
Bank to Bank

N

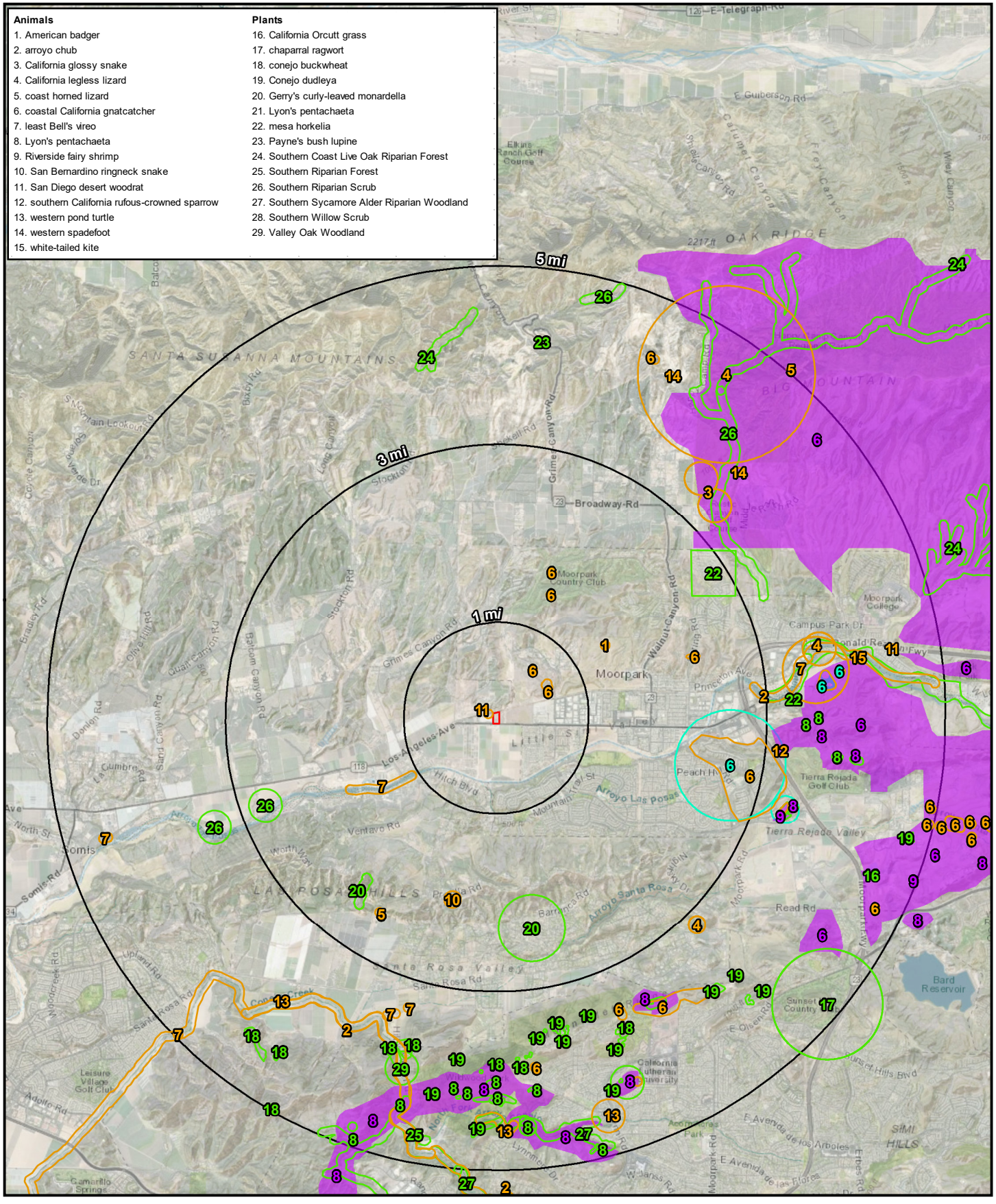
0 30 60 120

Feet

Figure 5
Pentair Expansion CEQA
Jurisdictional Delineation Results

Name: 21321 BIO Fig 5 Jurisdictional Delineation Results.Mxd
Print Date: 6/3/2022 12:24:10 PM Author: pcarlos

CHAMBERS GROUP


Animals
1. American badger
2. arroyo chub
3. California glossy snake
4. California legless lizard
5. coast horned lizard
6. coastal California gnatcatcher
7. least Bell's vireo
8. Lyon's pentachaeta
9. Riverside fairy shrimp
10. San Bernardino ringneck snake
11. San Diego desert woodrat
12. southern California rufous-crowned sparrow
13. western pond turtle
14. western spadefoot
15. white-tailed kite
Plants
16. California Orcutt grass
17. chaparral ragwort
18. conejo buckwheat
19. Conejo dudleya
20. Gerry's curly-leaved monardella
21. Lyon's pentachaeta
22. mesa horkelia
23. Payne's bush lupine
24. Southern Coast Live Oak Riparian Forest
25. Southern Riparian Forest
26. Southern Riparian Scrub
27. Southern Sycamore Alder Riparian Woodland
28. Southern Willow Scrub
29. Valley Oak Woodland
5 mi
3 mi
1 mi
SANTA SUSANNA MOUNTAINS
OAK RIDGE
Moorpark
Somis
LAS POSAS HILLS
Santa Rosa Valley
Tierra Rejada Valley
SIMI HILLS
Broadway-Rd
Los Angeles Ave
Hitch Blvd
Ventavo Rd
Santa Rosa Rd
Read Rd
Moorpark Country Club
Tierra Rejada Golf Club
Bard Reservoir
Arroyo Las Posas
Arroyo Santa Rosa
Project Location
USFWS Critical Habitat
USFWS Occurrences
CNDDB Occurrences
Animals
Plants
N
0 0.5 1 2
Miles
Figure 6
Pentair Expansion CEQA
CNDDB and USFWS Occurrences
Name: 21321 BIO Fig 6 CNDDB and USFWS Occurrences.Mxd
Print Date: 4/4/2022 1:59:49 PM Author: pcarlos
CHAMBERS GROUP

ATTACHMENT 2 – PLANT SPECIES OBSERVED

ATTACHMENT 2 – PLANT SPECIES OBSERVED

Scientific Name	Common Name
ANGIOSPERMS (EUDICOTS)	
ANACARDIACEAE	**SUMAC OR CASHEW FAMILY**
*Schinus molle**	Peruvian pepper tree
APIACEAE	**CARROT FAMILY**
*Conium maculatum**	poison hemlock
ASTERACEAE	**SUNFLOWER FAMILY**
Heterotheca grandiflora	telegraph weed
Lepidospartum squamatum	scale-broom
Stephanomeria virgata	twiggy wreathplant
BORAGINACEAE	**BORAGE FAMILY**
Amsinckia sp.	fiddlenecks
Cryptantha intermedia	common forget-me-not
Phacelia ramosissima	branching phacelia
BRASSICACEAE	**MUSTARD FAMILY**
*Hirschfeldia incana**	shortpod mustard
EUPHORBIACEAE	**SPURGE FAMILY**
*Ricinus communis**	castor-bean
FABACEAE	**LEGUME FAMILY**
Lupinus bicolor	miniature lupine
GERANIACEAE	**GERANIUM FAMILY**
*Erodium botrys**	broad-lobed filaree
*Erodium cicutarium**	red-stemmed filaree
LAMIACEAE	**MINT FAMILY**
Salvia apiana	white sage
MALVACEAE	**MALLOW FAMILY**
*Malva parviflora**	cheeseweed
POLYGONACEAE	**BUCKWHEAT FAMILY**
Rumex hymenosepalus	wild rhubarb
SOLANACEAE	**NIGHTSHADE FAMILY**
Datura wrightii	jimson weed
URTICACEAE	**NETTLE FAMILY**
*Urtica urens**	dwarf nettle
ANGIOSPERMS (MONOCOTS)	
POACEAE	**GRASS FAMILY**
*Ehrharta erecta**	panic veldt grass
*Schismus barbatus**	Mediterranean schismus

*Non-Native Species

ATTACHMENT 3 – WILDLIFE SPECIES OBSERVED/DETECTED

ATTACHMENT 3: WILDLIFE SPECIES OBSERVED

Scientific Name	Common Name
CLASS AVES	**BIRDS**
TROCHILIDAE	**HUMMINGBIRDS**
Calypte anna	Anna's hummingbird
COLUMBIDAE	**PIDGEONS & DOVES**
Zenaida macroura	mourning dove
CORVIDAE	**JAYS & CROWS**
Corvus corax	common raven
FRINGILLIDAE	**FINCHES**
Carpodacus mexicanus	house finch
MIMIDAE	**THRASHERS, MOCKINGBIRDS, TREMBLERS, & NEW WORLD CATBIRDS**
Mimus polyglottos	northern mockingbird
PARULIDAE	**NEW WORLD WARBLERS**
Setophaga coronata	yellow-rumped warbler
PASSERIDAE	**OLD WORLD SPARROWS**
Passer domesticus	house sparrow

ATTACHMENT 4 – SITE PHOTOGRAPHS

ATTACHMENT 4 – SITE PHOTOGRAPHS

	**Photo 1** Photo facing train tracks and orchards to the north. Photo depicting Disturbed vegetation.
	**Photo 2** Photo facing Pentair Pool Products to the southwest. Photo depicting Disturbed vegetation.
	**Photo 3** Photo facing southeast. Photo depicting Disturbed vegetation.

	**Photo 4** Photo facing northeast. Photo depicting Disturbed vegetation.
	**Photo 5** Photo facing east. Photo Depicting cement channel at the southern end of the Project site.

PENTAIR INDUSTRIAL EXPANSION PROJECT CULTURAL RESOURCES RECORDS SEARCH, LITURATURE REVIEW, AND PEDESTRIAN SURVEY RESULTS LETTER REPORT

City of Moorpark

March 15, 2022
9620 Chesapeake Drive, Suite 202
San Diego, CA 92123
(21321)

Freddy Carrillo
Associate Planner
City of Moorpark
799 Moorpark Ave
Moorpark, CA 93021

Subject: Pentair Industrial Expansion Project Cultural Resources Records Search, Literature Review and Pedestrian Survey Results Letter Report

Dear Mr. Carrillo,

Chambers Group, Inc. (Chambers Group) is providing this Letter Report to the City of Moorpark documenting the results of the cultural resources records search, literature review, and pedestrian survey in support of the proposed Pentair Industrial Expansion Project (Project) in the City of Moorpark, Ventura County, California. This assessment included a desktop cultural resources records search and literature review for the Project site and study area (Figure 1) accompanied by a pedestrian survey to investigate for surface signs of archaeological and/or paleontological resources. The purpose of the review was to gather and analyze information needed to assess the potential for impacts to prehistoric and/or historic cultural resources within the Proposed Project site.

Project Description

The proposed Project is located on an existing 5.65-acre property located directly east of the existing Pentair warehouse building at 10951 Los Angeles Avenue, Moorpark, California. The proposed Project includes the construction of a one-story concrete build-to-suit expansion building for Pentair, with an anticipated 90,566 sq. feet of floor area. Total coverage of the building will be 36.8% of the site, which is lower than the City's Floor Area Ratio (FAR) cap of 38%. The building is proposed to be a one-story building, approximately 44 feet in height, as a Type III-B concrete tilt-up structure. The proposed material for the building is staggered vertical concrete panel surfaces with glazing windows and painted with an alternating color scheme. The parking and road surface will comprise approximately 38% of the site. The parking and road surfaces will be made up of asphalt, concrete (dock areas), and decorative paving at the entrance of the Project site. The site will also include onsite underground storm drain chambers for retention of rainwater.

Primary vehicular access to the Project site will be provided through Montair Drive, which is an existing easement. Montair Drive crosses the neighboring Pentair site to the west and connects at the northwest corner of the Project site. Montair Drive connects to Los Angeles Avenue via an existing intersection with turn lanes in each direction. Additionally, a secondary (emergency) vehicular access to the Project site will be provided via a new 35-foot-wide bridge spanning the Gabbert Canyon Debris Basin as a driveway off Los Angeles Avenue that would provide both truck and vehicle access. The site also features a 45-foot-wide lane located on the west side of the Project site for truck access to the loading docks and a 30-foot-wide drive lane throughout the remainder of the Project site for vehicular traffic.

The City of Moorpark is the lead agency for the proposed Project. This Initial Study has been prepared in accordance with CEQA (Public Resources Code §21000 et seq.) and the State CEQA Guidelines (Title 14, California Code of Regulations, §15000 et seq.) and has determined that preparation of a Mitigated Negative Declaration would be appropriate under CEQA.

PENTAIR INDUSTRIAL EXPANSION PROJECT CULTURAL RESOURCES RECORDS SEARCH, LITURATURE REVIEW, AND PEDESTRIAN SURVEY RESULTS LETTER REPORT

City of Moorpark

Location and Setting

The Project area is located within the City of Moorpark, Ventura County, California on the Moorpark 7.5-min USGS quadrangle. The existing 5.65-acre Project area is located within Assessor's Parcel Number (APN) 511-0-200-265, directly east of the existing Pentair warehouse building at 10951 Los Angeles Avenue. The Project site is north of Los Angeles Avenue and east of an agricultural field. The Southern Pacific Railroad is to the immediate north of the Project area, with the right of way adjacent to the northern Project boundary line. Historically, the Project area land has been used for agriculture. The Project site is located within an area predominantly composed of light industry.

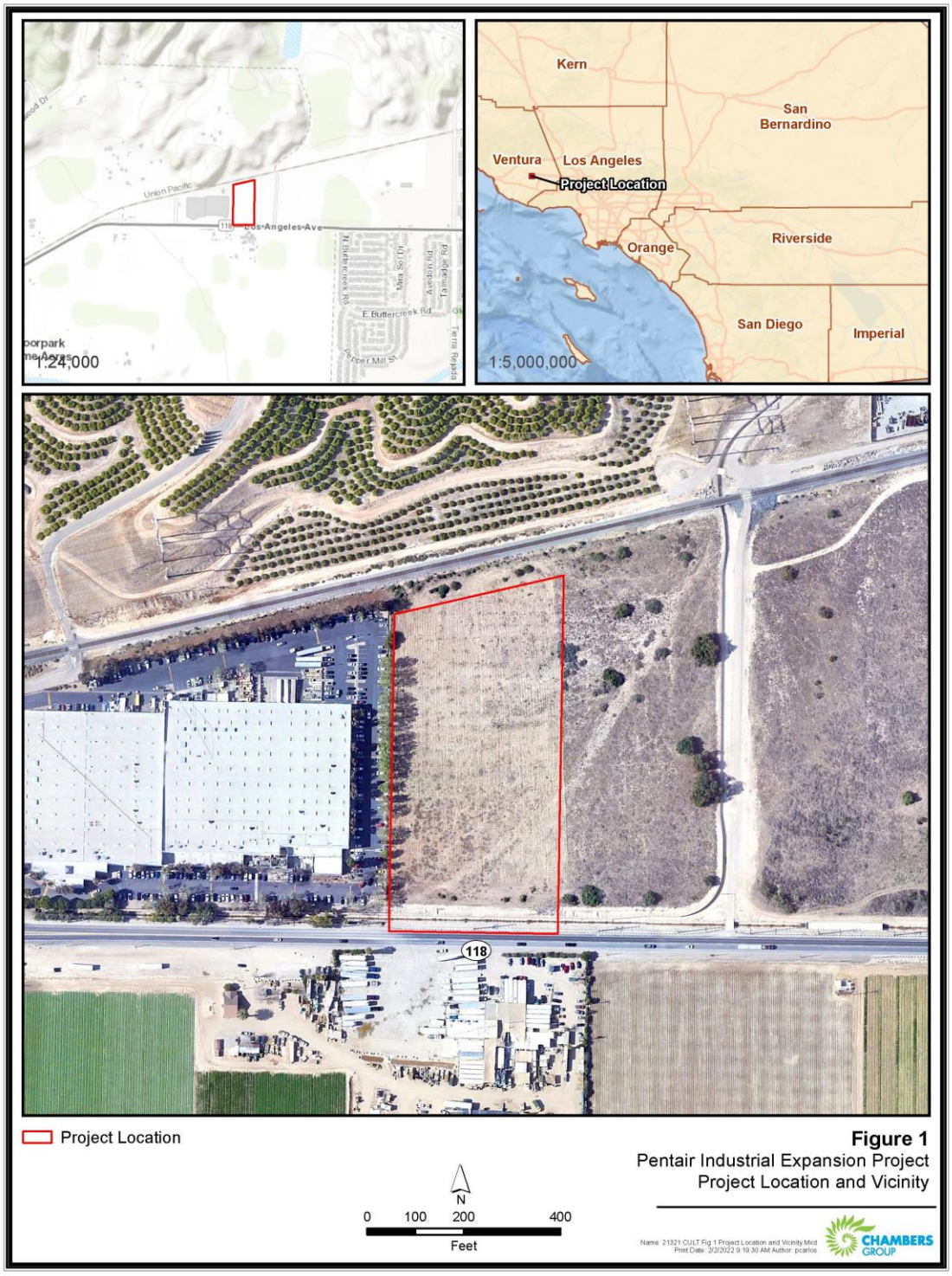


Figure 1: Project Location and Vicinity

Regulatory Context

As the lead agency for the Proposed Project, the City of Moorpark must comply with the provisions of CEQA, which requires a lead agency to determine whether a project may have a significant effect on historical resources (PRC Section 21084.1). In addition to State regulations, projects built in the City of Moorpark are also subject to a number of local regulations relating to historical resources. Chapter 15.36 of the Moorpark Municipal Code pertains specifically to historic preservation within the city. The regulatory framework as it pertains to cultural resources under CEQA has been detailed below.

Under the provisions of CEQA, including the CEQA Statutes (PRC §§ 21083.2 and 21084.1), the CEQA Guidelines (Title 14 CCR § 15064.5), and PRC § 5024.1 (Title 14 CCR § 4850 et seq.), properties expected to be directly or indirectly affected by a proposed project must be evaluated for eligibility for listing in the California Register of Historical Resources (CRHR, PRC § 5024.1).

The purpose of the CRHR is to maintain listings of the State's historical resources and to indicate which properties are to be protected, to the extent prudent and feasible, from material impairment and substantial adverse change. The term *historical resources* includes a resource listed in or determined to be eligible for listing in the CRHR; a resource included in a local register of historical resources; and any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant (CCR § 15064.5[a]). The criteria for listing properties in the CRHR were expressly developed in accordance with previously established criteria developed for listing in the National Register of Historic Places (NRHP). The California Office of Historic Preservation (OHP 1995:2) regards "any physical evidence of human activities over 45 years old" as meriting recordation and evaluation.

California Register of Historic Resources

A cultural resource is considered "historically significant" under CEQA if the resource meets one or more of the criteria for listing in the CRHR. The CRHR was designed to be used by State and local agencies, private groups, and citizens to identify existing cultural resources within the state and to indicate which of those resources should be protected, to the extent prudent and feasible, from substantial adverse change. The following criteria have been established for the CRHR. A resource is considered significant if it:

1. is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. is associated with the lives of persons important in our past;
3. embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
4. has yielded, or may be likely to yield, information important in prehistory or history.

In addition to meeting one or more of the above criteria, historical resources eligible for listing in the CRHR must retain enough of their historic character or appearance to be able to convey the reasons for their significance. Such integrity is evaluated in regard to the retention of location, design, setting, materials, workmanship, feeling, and association.

Under CEQA, if an archeological site is not a historical resource but meets the definition of a "unique archeological resource" as defined in PRC § 21083.2, then it should be treated in accordance with the provisions of that section. A *unique archaeological resource* is defined as follows:

- An archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information
- Has a special and particular quality, such as being the oldest of its type or the best available example of its type
- Is directly associated with a scientifically recognized important prehistoric or historic event or person

Resources that neither meet any of these criteria for listing in the CRHR nor qualify as a "unique archaeological resource" under CEQA PRC § 21083.2 are viewed as not significant. Under CEQA, "A non-unique archaeological resource need be given no further consideration, other than the simple recording of its existence by the lead agency if it so elects" (PRC § 21083.2[h]).

Impacts that adversely alter the significance of a resource listed in or eligible for listing in the CRHR are considered a significant effect on the environment. Impacts to historical resources from a proposed project are thus considered significant if the project:

(1) physically destroys or damages all or part of a resource;

(2) changes the character of the use of the resource or physical feature within the setting of the resource, which contributes to its significance; or

(3) introduces visual, atmospheric, or audible elements that diminish the integrity of significant features of the resource.

Assembly Bill 52

Assembly Bill (AB) 52 was enacted in 2015 and expands CEQA by defining a new resource category: tribal cultural resources. AB 52 establishes that "a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment" (PRC Section 21084.2). AB 52 also establishes a formal consultation process for California tribes regarding those resources. The consultation process must be completed before a CEQA document can be certified. AB 52 requires that lead agencies "begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project." Native American tribes to be included in the process are those that have requested notice of projects proposed in the jurisdiction of the lead agency. It further states that the lead agency shall establish measures to avoid impacts that would alter the significant characteristics of a tribal cultural resource, when feasible (PRC Section 21084.3). PRC Section 21074 (a)(1)(A) and (B) defines tribal cultural resources as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe" and meets either of the following criteria:

- Listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in PRC Section 5020.1(k)
- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1 (in applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe)

Local

In addition to State regulations, projects built in the City of Moorpark are also subject to a number of local regulations relating to historical resources. Chapter 15.36 of the Moorpark Municipal Code pertains specifically to historic preservation within the city. Cited in Section 15.33.010 of the Municipal Code, its purpose is as follows:

To provide for the identification, protection, enhancement, perpetuation and use of historic landmarks within the city that reflects special elements of the city's historical heritage and to promote the general welfare by:

A. Encouraging public knowledge, understanding, and appreciation of the city's past
B. Fostering civic pride in the beauty and personality of the city and in the accomplishments of the city's past
C. Safeguarding the heritage of the city by protecting landmarks that reflect the city's history
D. Protecting and enhancing property values within the city and increasing economic and financial benefits to the city and its inhabitant
E. Identifying as early as possible and resolving conflicts between the preservation of historical landmarks and alternative land uses
F. Preserving historic building materials through maintenance and restoration of existing historical landmarks
G. Taking whatever steps are reasonable and necessary to safeguard the property rights of the owners whose building or structure is declared to be a landmark
H. Promoting the use of landmarks for the education and enjoyment of the people of the city
I. Promoting awareness of the economic benefits of historic preservation (Moorpark Municipal Code Section 15.36.10 1994)

The City ordinance also establishes the procedure for the designation of cultural resources in Moorpark. The criterion for the designation of a landmark is as follows:

A building, site, tree or structure may be designated as a landmark if it is found that the proposed landmark meets one or more of the following criteria:

1. It is associated with persons or events significant in local, state, or national history.
2. It reflects or exemplifies a particular period of national, state, or local history.
3. It embodies the distinctive characteristics of a type, style or period of architecture or of a method of construction.
4. It is strongly identified with a person or persons who significantly contributed to the culture, history, or development of the area.
5. It is one of the few remaining examples in the area possessing distinguishing characteristics of an architectural type of specimen.
6. It is a notable work of an architect or master builder whose individual work has significantly influenced the development of the area.
7. It embodies elements of architectural design, detail, materials or craftsmanship that represents a significant architectural innovation.
8. It has a unique location or singular physical characteristics representing an established and familiar visual feature of a neighborhood, community or the area.
9. It has unique design or detailing.
10. It is a particularly good example of a period of style.

11. It contributes to the historical or scenic heritage or historical or scenic properties of the area (to include, but not limited to landscaping, light standards, trees, curbing, and signs). (Moorpark Municipal Code Section 15.36.060 1994)

The City of Moorpark has additional legislated goals and policies outlined in the City's General Plan Land Use Element to promote balanced city growth pattern and land use compatibility, maintain the city's suburban/rural character, revitalize the downtown area, preserve important natural features and biological and cultural resources, and require that overall intensity and density of land use decreases away from the valley floor.

GOAL 6: Encourage the use of Specific Plans in the undeveloped areas of the community.

Policy 6.5: The land use plan shall include adequate land for public recreational, cultural, educational, institutional (governmental, police, fire, etc.), religious and other service uses for the community.

GOAL 15: Maintain a high quality environment that contributes to and enhances the quality of life and protects public health, safety and welfare.

Policy 15.3: Natural and cultural resources having significant educational, scientific, scenic, recreational or social value shall be protected and preserved.

GOAL 17: Enhance the physical and visual image of the community.

Policy 17.11: The City shall cooperate with the County of Ventura Cultural Heritage Board to identify and inventory, and preserve Moorpark's historical resources.

Finally, historic trees are addressed in Title 12 of the City of Moorpark Municipal Code. More specifically, Chapter 12.12.060, Tree Preservation Guidelines, provides instruction that pertains to the preservation of trees. These guidelines are provided below and should be adhered to throughout the construction of the proposed project to ensure protection of the historic trees.

a. Initial project layout, design, and grading shall recognize the desirability of preserving native oak trees, historic trees, or mature trees with appropriate modifications and adjustments to accommodate preservation and maintenance by locating the best candidates in areas where preservation is feasible. Design of the grading and other improvements shall reflect consideration of the following safeguards:

    1. Location in minimum growing areas as required by individual species
    2. No disruption or removal of structural feeder roots
    3. Fencing of trees at or beyond their driplines during grading and construction activities
    4. No filling, cutting, development, or compaction of soils within the dripline
    5. Such other measures required by the species of tree to be preserved as recommended by the consulting arborist, horticulturist, or landscape architect

b. It is recognized that the complete preservation of healthy trees may sometimes conflict with normal land developmental considerations such as proper drainage, grading, circulation, safety, and provision of utilities. Within a given development, it may not be practical to preserve all healthy trees; and, therefore, the City and the developer must be willing to compromise the goal of complete tree preservation in order to address other public safety and design concerns. In such instances, the design of the development must address preservation of the most desirable and significant of the healthy trees; and the developer is encouraged to utilize creative land planning techniques to achieve this end.

c. The planning commission of the City, when reviewing development plans, shall determine the adequacy and appropriateness of the proposed preservation plan.

d. Following approval of such a development, the developer shall submit grading, improvement, and precise landscaping plans detailing the approved preservation plan. Such plans shall be approved by the city engineer and/or the director of community development, as appropriate. Prior to use inauguration, the preserved trees shall be trimmed for balance, structural integrity, and ornamental appearance and treated for any diseases.

e. The precise vertical and horizontal locations plus or minus 1 foot of all mature trees shall be shown on an exhibit as part of the initial application for any project unless that project would involve no exterior construction activities (Ord. 101 § 1, 1988).

Cultural Setting

Prehistoric Overview

During the twentieth century, many archaeologists developed chronological sequences to explain prehistoric cultural changes within all or portions of Southern California (Moratto 1984; Jones and Klar 2007). A prehistoric chronology was devised for the Southern California coastal region based on early studies and focused on data synthesis that included four horizons: Early Man, Milling Stone, Intermediate, and Late Prehistoric (Wallace 1955, 1978). Though initially lacking the chronological precision of absolute dates (Moratto 1984:159), Wallace's 1955 synthesis has been modified and improved using thousands of radiocarbon dates obtained by Southern California researchers over recent decades (Byrd and Raab 2007:217; Koerper and Drover 1983; Koerper et al. 2002). The prehistoric chronological sequence for Southern California presented below is a composite based on Wallace (1955) and Warren (1968) as well as later studies, including Koerper and Drover (1983).

Ethnographic Overview

The Project site lies within a transitional area historically occupied by the Ventureño Chumash, so called after their historic-period association with Mission San Buenaventura (Grant 1978) and the Tataviam or Fernandeño named after their association with the Mission San Fernando.

Chumash

The Chumash spoke six closely related Chumashan languages, which have been divided into three branches—Northern Chumash (consisting only of Obispeño), Central Chumash (consisting of Purisimeño, Ineseño, Barbareño, and Ventureño), and Island Chumash (Jones and Klar 2007:80). Groups neighboring Chumash territory included the Salinan to the north, the Southern Valley Yokuts and Tataviam to the east, and the Gabrielino (Tongva) to the south.

Tatavium

The Tataviam were not well documented by early ethnographers; however, researchers today generally agree that the Tataviam spoke an Uto-Aztecan language, most likely a Takic language (Hudson 1982). Tataviam territory included the upper Santa Clara River from Piru Creek eastward, extending over the Sawmill Mountains to the southwest edge of the Antelope Valley (King and Blackburn 1978). Their territory was bounded on the west and north by various Chumash groups; on the south by the Tongva (Gabrielino and Fernandeño, though some Tataviam were also identified as Fernandeño because of their association with Mission San Fernando); and to the east by the Kitanemuk and Serrano.

Historic Overview

Post-European contact history for the state of California is generally divided into three periods: the Spanish Period (1769–1822), the Mexican Period (1822–1848), and the American Period (1848– present). Briefly, and in very general terms, the Spanish Period encompassed the earliest historic-period explorations of the West, colonization, missionization and proselytization across the western frontier, with few major centers such as Los Angeles and Monterey and a line of missions and presidios with attendant satellite communities, minor prospecting, and a foundational economic structure based on the rancho system. The Mexican Period initiated with a continuation of the

same structures; however, commensurate with the political changes that led to the establishment of the Mexican state the missions and presidios were secularized, the lands parceled, and Indian laborers released. Increased global trade introduced both foreign and American actors into the Mexican economic and political sphere, and both coincidentally, and purposefully, smoothing the transition to the American Period. The American Period was ushered in with a momentous influx of people seeking fortune in the Sierra foothills where gold was "discovered" in 1848. By the early 1850s people from all over the globe had made their way to California. Expansive industries were required to supply the early mining operations, such as forestry products, food networks such as grains, poultry, cattle, water systems, which intensified the early Mexican Period systems of ranches and supply chains, as well as the development and expansion of port cities to supply hard goods and clothes, animals, and people along improved trail and road networks. California cycled through boom and bust for several decade until World War I when the Department of the Navy began porting war ships along the west coast. Subsequently, California has grown, and contracted, predominantly around military policy along the west coast, and the Pacific Ocean. Following the industrial expansion related to World War II and the Cold War, technology and systems associated have come to fore as economic drivers.

City of Moorpark

The area that encompasses the current-day City of Moorpark was historically part of the 113,000-acre Rancho San José de Nuestra Senora de Altagracia y Simi (commonly known as Rancho Simi) which was granted by Governor Diego de Borica to Javier, Patricio, and Miguel Pico in 1795. Rancho Simi remained rural in the decades after its granting, primarily utilized for the grazing of cattle. A road was established through the Simi Valley to accommodate overland mail delivery in 1861, largely following an extant Chumash trail. The road created a viable access route for wagon transport in an area previously inaccessible to such travel, allowing further development of the region (Appleton 2009).

Rancho Simi ownership was transferred several times including an acquisition by the Philadelphia and California Petroleum Company for the exploration of oil. However, Rancho Simi was eventually subdivided and sold by 1887, after oil extraction failed to produce sufficient quantities. Robert W. Poindexter, secretary of the Simi Land and Water Company, eventually purchased the land which became Moorpark.

In 1900, Poindexter founded the town of Moorpark with the anticipation of the Southern Pacific Railroad reaching the area. The community was named for the Moorpark apricot, which grew successfully throughout the Simi Valley region (City of Moorpark 2015). Following the arrival of the railroad, the Moorpark area continued to grow and develop. The economy continued to be based in agriculture, primarily apricots. The railroad allowed for an increase in profitability with the associated expanded network for exporting goods. As large-scale agricultural irrigation methods became more sophisticated, the variety of crops being produced increased to include citrus and walnuts (Winters 2016).

Arriving in Simi Valley in the 1920s, the poultry industry also made significant contributions to shaping the economy and character of Moorpark (Los Angeles Times 1990, 1992). However, agriculture continued to characterize Moorpark throughout the World War II years. Consistent with trends throughout Southern California following the Second World War, the Simi Valley region saw an increase in large scale suburban development of areas that were formerly agricultural lands. This trend impacted Moorpark, although less so than in other areas in the region. The town of Moorpark became a city when it was incorporated on July 1, 1983 (Moorpark Historical Society 2021).

Methods of Review

Chambers Group requested a records search from the California Historical Resources Information System (CHRIS) South-Central Coastal Information Center (SCCIC) at California State University, Fullerton on November 5, 2021. The SCCIC returned the records search results on January 19, 2022, providing information on all documented cultural resources and previous archaeological investigations within one mile of the Project site. A one-mile study area was requested to provide additional context to the Project site and surrounding area and more information on which to base this review. Resources consulted during the records search conducted by the SCCIC included the NRHP, California Historical Landmarks (CHL), California Points of Historical Interest (CPHI), Caltrans Historic Highway Bridge Inventory,

the California State Historic Resources Inventory, local registries of historic properties, and a review of available Sanborn Fire Insurance maps as well as historic photographs, maps, and aerial imagery. The task also included a search for potential prehistoric and/or historic burials (human remains) evident in previous site records and/or historical maps. In addition, Chambers Group submitted a request to the Native American Heritage Commission (NAHC) for a review of the Sacred Land Files (SLF) for the Project site and surrounding vicinity. Results of the records search (Figure 2) and additional research are detailed below and included in Attachment B.

Project Personnel

Chambers Group Cultural Resources Department Lead Lucas Tutschulte managed the Project and authored the report. Chambers Group archaeologists and cross-trained paleontologists Ken Hazlett and Kellie Kandybowicz conducted the background research and supported with preparation of the report. Additionally, Ken Hazlett completed the pedestrian survey. Richard Shultz, MA, RPA, served as Principal Investigator for cultural resources, and performed quality control for the report.

Cultural Resources Reports within the Study Area

Based on the record search conducted by the SCCIC, 31 cultural resource studies have previously been completed within the one-mile records search radius. Table 1 provides further details of these 31 studies. Of these 31 reports, one is located within the Project site (i.e., VN-00775). This project is bolded and italicized in the table.

Table 1: Previous Cultural Resources Studies within the One-Mile Study Area

Report Number	Year	Author	Title	Resources	Within Project Boundary?
VN-00126	1975	Clewlow, William C. Jr.	Archaeological Resources of the Proposed Callegus Creek Project	56-000071, 56-000200, 56-000213, 56-000214, 56-000215, 56-000216, 56-000217, 56-000218, 56-000219, 56-000242	No
VN-00213	1979	Lopez, Robert	Archaeological Assessment for Pm-3192 Moorpark, Ventura County California.		No
VN-00233	1979	Lopez, Robert	Archaeological Assessment for Pm-3244 Moorpark, Ventura County California 93003.		No
VN-00291	1980	Lopez, Robert	An Archaeological Reconnaissance of the 850 Acres Involved in the Moorpark Mountain Meadows Development, Ventura County, California.		No
VN-00560	1980	Callison, Sheila	Cultural Resource Survey for Tr-3270		No
VN-00572	1988	Dames and Moore	Phase 1 Cultural Resources Survey Fiber Optic Cable Project, Burbank	56-000027, 56-000196, 56-000202, 56-000240, 56-000241, 56-000341,	No

Table 1: Previous Cultural Resources Studies within the One-Mile Study Area

Report Number	Year	Author	Title	Resources	Within Project Boundary?
			to Santa Barbara, California for Us Sprint Communications Company	56-000342, 56-000550, 56-000643, 56-000644, 56-000655, 56-000729, 56-000789, 56-000895, 56-000896, 56-000916, 56-000917, 56-000918	
VN-00575	1988	Lopez, Robert	An Archaeological Reconnaissance of the Areas Involved in the Proposed Swepi Well Locations and Pipeline Routes Oxnard Plain, Ventura County, California	56-000631, 56-000665, 56-000666	No
VN-00607	1977	Lopez, Robert	An Archaeological Survey of 2500 Acres for a Proposed Oil Exploration Project by Neaves Petroleum Developments in the Vicinity of Moorpark, Ventura County, California		No
VN-00775	***1989***	***Lopez, Robert***	***An Archaeological Reconnaissance of the Area Involved in Jemco Properties Proposed Industrial Development Moorpark, Ventura County, California***		***Yes***
VN-00821	1990	Romani, Gwendolyn R.	Archaeological Investigation: 538 Los Angeles Avenue, Moorpark, Ventura County		No
VN-00964	1991	Lopez, Robert	An Archaeological Reconnaissance of the Area Involved in Cup 4666 Moorpark, Ventura County, California.		No
VN-01059	1991	Singer, Clay A. and John E. Atwood	Cultural Resources Survey and Impact Assessment for Parcel B of Lot 53 on Gabbert Road in the City of Moorpark, Ventura County, California.		No
VN-01150	1992	Gerber, Joyce	The Results of a Phase 1 Field Survey for a Proposed Channel Widening Project Located Along		No

Table 1: Previous Cultural Resources Studies within the One-Mile Study Area

Report Number	Year	Author	Title	Resources	Within Project Boundary?
			Arroyo Simi, Ventura County, California		
VN-01153	1991	Peak and Associates, Inc.	Class 3 Cultural Resource Assessment of the Proposed Carpinteria and Southern Reroutes, Santa Barbara, Ventura, and Los Angeles Counties, California	56-001089	No
VN-01265	1992	Reed, L.W.	Consolidated Report: Cultural Resources Studies for the Proposed Pacific Pipeline Project	19-000007, 19-000021, 19-000034, 19-000089, 19-000251, 19-000357, 19-000385, 19-000389, 19-000390, 19-000407, 19-000409, 19-000668, 19-000781, 19-000830, 19-000887, 19-000901, 19-000963, 19-001097, 19-001112, 19-001124, 19-001575, 19-001620	No
VN-01329	1994	Whitley, David S. and Joseph M. Simon	Phase 1 Archaeological Survey and Cultural Resources Assessment for the Levy Specific Plan Study Area, Ventura County, California		No
VN-01589	1977	Lopez, Robert	Archaeological Survey of a Proposed New Well Site Within the Area of the Winchester Development in the Vicinity of Moorpark, Ventura County, CA		No
VN-02054	1999	Whitley, David S. and Joseph Simms	Phase I Archaeological Survey of the Triliad Development Study Area, Moorpark, Ventura County, California		No
VN-02314	2003	Whitley, David S. and Joseph M. Simon	Phase I Archaeological Survey of Hitch Ranch, Moorpark, Ventura County, California		No

Table 1: Previous Cultural Resources Studies within the One-Mile Study Area

Report Number	Year	Author	Title	Resources	Within Project Boundary?
VN-02386	2006	Jordon, Stacey C. and Patterson, Joshua D.	Archaeological Survey Report for the Southern California Edison Company Replacement of 71 Deteriorated Poles on the Patricia 16kv, Thacher 16kv, Matilda 16kv, Tico 16kv, Seaquit 4kv, Maguire 16kv, Galahad 16kv, Brennan B4 16kvm Strathern 16kv, Gabbert B2	19-001041, 19-001402, 19-002075, 19-002076, 19-120027, 56-000137, 56-000140, 56-000192, 56-000193, 56-001109, 56-001265, 56-001266, 56-100048, 56-100049, 56-152750	No
VN-02390	2006	Jordan, Stacey C. and Patterson, Joshua D.	Archaeological Survey Report for the Southern California Edison Company Replacement of 30 Deteriorated Poles Private and Public Inholdings, Ventura, Los Angeles, and Santa Barbara Counties, California	19-000729, 19-000730, 19-000731, 19-001266, 56-000141, 56-000550, 56-000562, 56-000901, 56-000902, 56-000980, 56-001110, 56-001124, 56-001125	No
VN-02504	2006	Arrington, Cindy and Nancy Sikes	Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project State of California: Volumes I and II		No
VN-02617	2007	Schmidt, James J.	Archaeological Survey Report, Southern California Edison, Moorpark-Newbury 66kv New Source Line Project, Wo 4605-2104: Jo 6042-0468	56-000449, 56-000454, 56-001031, 56-001032, 56-001036	***Yes***
VN-02740	2009	Schmidt, James J.	Archaeological Survey Report: Southern California Edison Moorpark-Newbury 6kV Alternative Alignment	56-000217, 56-000218, 56-000219, 56-000228, 56-000455, 56-000456, 56-000493, 56-000864	No
VN-02752	2009	Maki, Mary	Archaeological Survey Report of Approximately 1 Acre & 13,000 Linear Feet for the Ventura County Water District No. 1 Reclaimed Water System project - Phases II & III, Moorpark, Ventura County, California	56-000228, 56-000864	No
VN-02810	2008	Schmidt, James, June Schmidt, and Gwen Romani	Results of Extended Phase I Investigations at Sites P56-100196 (SCE MN-1), P56-001797 (CA-Ven-1797; SCE MN-2), and P56-100197	56-001797, 56-100196, 56-100197	No

Table 1: Previous Cultural Resources Studies within the One-Mile Study Area

Report Number	Year	Author	Title	Resources	Within Project Boundary?
			(SCE MN-3), for the Southern California Edison Moorpark-Newbury Park 66kV New Source Line Project, Ventura County, California		
VN-02872	2009	Fortier, Jana	TEA-21 Rural Roadside Inventory: Native American Consultants and Ethnographic Study for Caltrans District 7, Ventura County		No
VN-03094	2002	Foster, John A.	Historic Resource Evaluation Report- Mason Avenue At-Grade Crossing and Safety Improvements Project, Los Angeles City, California		No
VN-03196	2014	Rendon, Richard	Section 1-6 Consultation LWCF Project LW-56-015, Arroyo Vista Recreational Trail, Moorpark		No
VN-03263	2015	Stone, David and Heather McDaniel	Archaeological Survey Report Moorpark - 2 Gabbert Road, Moorpark Ventura County, California		No
VN-03288	2017	Kay, Michael and Evelyn N. Chandler	Archaeological Survey Report for the Southern California Edison Company Transmission Line Rating Remediation (TLRR) Project for the Moorpark-Santa Clara No. 1 and No. 2 220 Kv Circuits Near Santa Paula, Ventura County, California	56-001693	No

Previously Recorded Cultural Resources within the Study Area

Based upon the record search conducted by the SCCIC, one previously recorded cultural resource was located within the one-mile records search radius. Table 2 and the discussion that follows provide further details of this resource, which is not located within the Project site.

Table 2: Previously Recorded Cultural Resources within the One-Mile Study Area

Primary Number	Trinomial	Resource Names	Site Description	Within Project Boundary?
P-56-100196	N/A	SCE MN-1	Prehistoric Isolate	No

Background Research Results

In addition to the records search review, Chambers Group archaeologists completed extensive background research to determine if any additional historic properties, landmarks, bridges, or other potentially significant or listed properties are located within the Project site or one-mile study area. This background research included, but was not limited to, the NRHP, California State Historic Property Data Files, California State Historical Landmarks, California Points of Historical Interest, Office of Historic Preservation Archaeological Determinations of Eligibility, historic aerial imagery accessed via NETR Online, Historic U.S. Geological Survey topographic maps, Built Environment Resource Directory (BERD), and California Department of Transportation (Caltrans) State and Local Bridge Surveys. Additionally, Chambers Group archaeologists reviewed the Ventura County Historical Landmarks inventory designated by the County of Ventura Cultural Heritage Board, as well as the Moorpark Historical Society and local historical newspaper clippings via Newspapers.com, ProQuest Historical Newspapers.com, and the California Digital Newspaper Collection.

As a result of the records search review and archival research, no previously recorded resources or any other listed or potentially significant properties are located within the Project site. However, the Project site is bound to the north by the former Southern Pacific Coast rail line, now Union Pacific / Amtrak / Metrolink line alignment. This alignment is not within the Project site but adjacent to the northern boundary. The former Southern Pacific Railroad alignment reached the Moorpark area by 1900 and substantially contributed to the early development of Moorpark (City of Moorpark 2015; Moorpark Historical Society 2021). Thus, there remains potential to encounter historic materials along the railroad alignment that could be associated with the historic context of Moorpark's development.

Additionally, based on the review of available historic photographs and aerial imagery, Chambers Group archaeologists observed that the Project site has been open space with evidence of sporadic agricultural use and no built environment features visible from 1947 to 2018. Historic topographic maps show the area as open space from 1947 through 2018. The historic aerial imagery and topographic maps indicate that the current alignment of the former Southern Pacific Coast rail line, now Union Pacific / Amtrak / Metrolink line was present from 1921 and runs parallel to the northern boundary of the Project site (United States Department of Agriculture (USDA); NETRonline 2021).

Native American Heritage Commission Sacred Lands File Search

On November 5, 2021, Chambers Group requested that the Native American Heritage Commission (NAHC) conduct a search of its Sacred Lands File (SLF) to determine if Tribal Cultural Resources (TCR) important to Native Americans have been recorded in the Project site and buffer area. Additional consultation with the tribes indicated in the NAHC SLF letter (Attachment A) would be required to determine the nature of any existing resources located during ground-disturbing activities. PRC Section 21074 defines a resource as a TCR if it meets either of the following criteria:

1. sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a tribe that are listed, or determined to be eligible for listing, in the national or state register of historical resources, or listed in a local register of historic resources; or
2. a resource that the lead agency determines, in its discretion, is a tribal cultural resource

On December 23, 2021, Chambers Group received a response from the NAHC stating that the search of its Sacred Lands File was **negative** for the presence of Native American cultural resources within Project site and the record search study area.

The NAHC provided a list of nine Native American tribal contacts that may have knowledge of cultural resources near the Project area (Attachment A). The nine Native American contacts identified by the NAHC include Barbareno/ Ventureno Band of Mission Indians, Chumash Council of Bakersfield, Coastal Band of the Chumash Nation, Northern Chumash Tribal Council, San Luis Obispo County Chumash Council, and Santa Ynez Band of Chumash Indians.

AB 52 Consultation

The City of Moorpark has stated that they plan to directly undertake the required AB 52 outreach for the Project. As of the date of this report, Chambers Group archaeologists have not been requested to support the AB 52 consultation efforts. Additionally, no responses or requests related to the tribal consultation has been conveyed to Chambers Group to incorporate into this cultural resources assessment and associated recommendations.

Field Survey Methods

Chambers Group archaeologist and cross-trained paleontologist Ken Hazlett completed a pedestrian survey of the Project site on December 9, 2021. The survey consisted of systematic surface inspection of all areas with transects walked at 10-meter intervals or less to ensure that any evidence of surface-exposed cultural materials and/or evidence of paleontological resources could be identified. Chambers Group examined the ground surface for the presence of prehistoric artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools), historical artifacts (e.g., metal, glass, ceramics), sediment discoloration that might indicate the presence of a cultural midden, roads and trails, and depressions and other features that might indicate the former presence of structures or buildings (e.g., post holes, foundations). The Project site was photographed using a digital camera and data was recorded using a hand-held global positioning system (GPS) unit with sub-meter accuracy. All field notes, photographs, and records related to the current study are on file at the Chambers Group San Diego office.

Field Survey Results

No evidence of prehistoric, historic archaeological resources or paleontological resources were identified within the Project site. During the field survey, ground surface visibility within the Project site ranged from approximately 40-60 percent visibility throughout the area, and up to 90 percent visibility within highly disturbed areas such as the established access roads. The entire Project site shows evidence of previous agricultural activity but has remained fallow for some time. However, it appears that there has been more recent discing activity to turn-over or aerate the soils.

Discussion

As detailed above, Chambers Group conducted a cultural resources records search, literature review, and pedestrian survey within the Pentair Industrial Expansion Project site and surrounding study area in December 2021 and January 2022. The purpose of the review was to gather and analyze information needed to assess the potential for impacts to cultural resources within the proposed Project site.

An archival records search through the CHRIS database at the SCCIC and background study of the Project area were conducted as part of the study. The SCCIC records search identified 31 cultural resources reports and one cultural resource within the one-mile study area; no resources were located within the Project site. Chambers Group also submitted a search request of the NAHC SLF to determine the presence or absence of data regarding any known tribal cultural resources previously reported within the Project area or surrounding vicinity. The NAHC SLF search resulted in negative findings.

The Project site was surveyed on December 9, 2021, by Chamber Group archaeologist Ken Hazlett. No cultural resources were identified during the field survey.

In summary, Chambers Group found no physical evidence of archaeological or paleontological resources within the Project site. This finding is based primarily on the visual examination of the ground surface observable at the surface level during the pedestrian survey effort. However, while no surficial evidence of prehistoric or historic archaeological resources were observed, the area is associated with the early Moorpark development and as such, has the potential to yield historic archaeological materials, likely in a shallow context. The subsurface context within the Project site is considered sensitive for buried cultural resources.

Additionally, the nature of the previous agricultural related disturbance allows for the potential to encounter intact native soils and geologic formations during the proposed Project construction and increases the risk of encountering intact buried cultural resources at depths below the previous disturbance related to standard agricultural practices (12-36 inches below surface). Similarly, encountering paleontological resources during the more intensive excavation for the proposed industrial buildings and related infrastructure is possible. Please see the associated partner document, *Pentair Industrial Expansion Project Paleontological Records Search, Literature Review, Pedestrian Survey Results Letter Report,* prepared by Chambers Group for more details regarding this Project as related to the investigation, conducted in tandem, for paleontological resources (Chambers Group 2022).

Recommendations

Based on the results of the records search review, survey, and background research, Chambers Group archaeologists observed that the Proposed Project site is previously disturbed and is currently a vacant parcel of land located within a largely urban context. Under most circumstances this would indicate that the potential for buried cultural resources and/or human remains within the Proposed Project area is low. Further, NAHC SLF search results were negative. However, background research revealed that the Project site is bound to the north by the Southern Pacific Railroad alignment that greatly contributed to the early development of Moorpark in the early 1900s. As previously noted in the historic context, the town of Moorpark was named as such by Robert W. Poindexter in anticipation of the Southern Pacific Rail being constructed and the inherent growth that it represented by connecting the Moorpark area with the larger Los Angeles metropolitan area and the coastal communities (Moorpark Historical Society 2021). Thus, there is potential to discover historical resources that could potentially provide further details related to the historic context along the railroad alignment, and within the Project site. Additionally, the potential to encounter intact buried native formations and associated prehistoric age cultural resources remains.

Chambers Group recommends the following mitigation measures be considered and implemented in support of this Project with the intent to reduce potential impacts to cultural resources to less than significant. If any cultural resources are identified, they would need to be evaluated for eligibility for the CRHR. Evaluation for archaeological sites consists of an archaeological testing program. For historical structures, evaluation by an architectural historian may be necessary. If determined eligible by the CEQA lead agency or the State Historic Preservation Office, mitigation, consisting of data recovery for archaeological sites and documentation for historical structures, would be required if preservation is not feasible.

MM CUL-1 Prior to issuance of grading permits, the applicant shall be required to obtain the services of a qualified project archaeologist to remain on-call for the duration of the proposed ground disturbing construction activity. The archeologist selected must be approved in writing by the Community Development Director. Prior to construction commencing, all construction personnel associated with earth moving equipment, drilling, grading, or excavating, shall be provided with basic training. The training shall be completed by the applicant retained project archaeologist and shall include written notification of the restrictions regarding disturbance and/or removal of any portion of archaeological deposits and the procedures to follow should a potential resource be identified during construction activity. The construction contractor, or its designee, shall be responsible for implementation of this measure. A tribal monitor shall be provided an opportunity to attend the pre-construction briefing, if requested. The project archaeologist shall be on-call and available to contact in the event of any unanticipated discovery of archaeological or historical resources during the proposed construction activity. If any archeological or historical resources are uncovered during grading or excavation operations, all grading or excavation shall immediately cease in the immediate area, a 50-foot buffer area around the discovery shall be cordoned off, and the discovery must be left untouched. The applicant, in consultation with the project archeologist, shall assure the preservation of the resource and immediately contact the Community Development Director by phone, in writing by email or hand

delivered correspondence informing the Director of the find. In the absence of the Director, the applicant shall so inform the City Manager. Additionally, all consulting Native American Tribal groups that requested notification of any unanticipated discovery of archaeological resources on the Project shall be notified appropriately. The applicant retained project archeologist shall provide an assessment regarding the sensitivity of the discovery and, if avoidance is not feasible, recommend the appropriate treatment and/or recovery procedures for discovery. The applicant shall pay for all costs associated with the investigation and, if required, the treatment and/or recovery of the discovery.

MM-CUL-2 At the completion of all ground-disturbing activities, the project archaeologist shall prepare an Archaeological Resources Monitoring Report summarizing all monitoring efforts and observations, as performed, and any and all prehistoric or historic archaeological finds as well as providing follow-up reports of any finds to the South-Central Coastal Information Center (SCCIC), as required.

Unanticipated discovery of Human Remains: In the event that human remains are discovered during ground-disturbing activities, then the Proposed Project would be subject to California Health and Safety Code 7050.5, CEQA Section 15064.5, and California Public Resources Code Section 5097.98. If human remains are found during ground-disturbing activities, State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the Ventura County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. In the event of an unanticipated discovery of human remains, the County Coroner shall be notified immediately. If the human remains are determined to be prehistoric, the County Coroner shall notify the NAHC, which shall notify a most likely descendant (MLD). The MLD shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

Chambers Group is available to assist with any further support or document preparation related to Cultural Resources, including tribal consultation. Please contact Meghan Gibson, Senior Project Manager, at (213) 623-1859 extension 7511, or the Cultural Resources Team Lead at the contact information below if you have any questions or comments regarding this report.

Sincerely,

CHAMBERS GROUP, INC.



Lucas Tutschulte

Cultural Department Lead
858.541.2800 Ext 7114
9620 Chesapeake Drive, Suite 202
San Diego, CA 92123

Attachments

Attachment A: NAHC SLF Records Search Results Letter

Attachment B: (Confidential): Record Search Results

References

Appleton, Bill

2009 *Images of America*. Santa Susana. Acadia Publishing, Charleston, South Carolina.

Byrd, Brian F., and L. Mark Raab

2007 Prehistory of the Southern Bight: Models for a New Millennium. In *California Prehistory*, edited by T. L. Jones and K. A. Klar, pp. 215-228. Altamira Press, New York.

California Office of Historic Preservation (OHP)

1995 Historic Properties Directory. State of California: Sacramento.

Chambers Group, Inc. (Chambers Group)

2021 Pentair Industrial Expansion Project Paleontological Records Search, Literature Review, Pedestrian Survey Results Letter Report . November.

City of Moorpark

1994 Moorpark Municipal Code Chapter 15.36-Historic Preservation. http://qcode.us/codes/moorpark/view.php?topic=15-15_36&frames=on.

2015 City of Moorpark History. Accessed November 12, 2021 at https://moorparkca.gov/381/History.

County of Ventura

2021 Ventura County Historical Landmarks and Points of Interest. Prepared by Ventura County Cultural Heritage Board. Accessed at https://www.hmdb.org/m.asp?m=131705.

Grant, C.

1978 Chumash: Introduction. In California, edited by R.F. Heizer, pp. 505-508. *Handbook of North American Indians, Vol. 8*, William C. Sturtevant, general editor.

Hudson

1982 "The Alliklik-Tataviam Problem". Journal of California and Great Basin Anthropology 4:222-232.

Jones and Klar

2007 California Prehistory: Colonization, Culture, and Complexity. AltaMira Press, Berkeley, California.

King and Blackburn

1978 Tataviam. In California, edited by R. F. Heizer, pp. 535–537. Handbook of North American Indians, Vol. 8, William G. Sturtevant, general editor, Smithsonian Institution, Washington, D.C.

Koerper and Drover

1983 Chronology Building for Coastal Orange County: The Case from CA-ORA-119-A. Pacific Coast Archaeological Society Quarterly 19(2):1–34.

City of Moorpark

Koerper et al.

2002 Complexity, Demography, and Change in Late Holocene Orange County. In Catalysts to Complexity: Late Holocene Societies of the California Coast, edited by Jon M. Erlandson and Terry L. Jones, pp. 63–81. Perspectives in California Archaeology, Vol. 6, Costen Institute of Archaeology, University of California, Los Angeles.

Los Angeles Times

1992 "EGG: Moorpark Conflicts Foreseen." Accessed via Newspapers.com on November 10, 2021.

1990 "Trial Opens Over Egg City Ownership." Accessed via Newspapers.com on November 10, 2021.

Moratto

1984 California Archaeology. Academic Press, New York.

National Park Service

1983 Archeology and Historic Preservation; Secretary of the Interior's Standards and Guidelines. 48 FR 44716-42.

NETRonline

2021 NETR Online. Aerial Images: 1947, 1969, 1978, 1980, 1994, 2002, 2005, 2009, 2010, 2012, 2014, 2016, 2018. Accessed at http://www.historicaerials.com/.

Moorpark Historical Society

2021 "History of Moorpark." Accessed at Moorparkhistoricalsociety.org

Schmidt, James J.

2007 Site Record for P-56-100196. On file at the South Central Coastal Information Center. California State University, Fullerton, California.

Wallace

1955 Suggested Chronology for Southern California Coastal Archaeology. Southwestern Journal of Anthropology 11(3):214–230.

1978 Post-Pleistocene Archaeology, 9000 to 2000 B.C. in California. Volume 8: Handbook of North American Indians. Robert F. Heizer, ed. and William C. Sturtevant, general ed. Pp. 505-508. Washington D.C.: Smithsonian Institution Scholarly Press.

Warren

1968 Cultural Tradition and Ecological Adaptation on the Southern California Coast. In Archaic Prehistory in the Western United States, edited by C. Irwin-Williams, pp. 1–14. Eastern New Mexico University Contributions in Anthropology No. 1. Portales.

Winters

2016 Images of America. Moorpark. Acadia Publishing, Charleston, South Carolina.

ATTACHMENT A – NAHC SLF RECORDS SEARCH RESULTS LETTER

Attachment A: NAHC SLF Records Search Results Letter

STATE OF CALIFORNIA — Gavin Newsom, *Governor*

NATIVE AMERICAN HERITAGE COMMISSION

December 23, 2021

Kellie Kandybowicz
The Chambers Group, Inc.

Via Email to: kkandybowicz@chambersgroupinc.com

Re: 21321 Pentair Industrial Expansion Project, Ventura County

Dear Ms. Kandybowicz:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

Attachment

CHAIRPERSON
Laura Miranda
Luiseño

VICE CHAIRPERSON
Reginald Pagaling
Chumash

PARLIAMENTARIAN
Russell Attebery
Karuk

COMMISSIONER
William Mungary
Paiute/White Mountain Apache

COMMISSIONER
Isaac Bojorquez
Ohlone-Costanoan

COMMISSIONER
Sara Dutschke
Miwok

COMMISSIONER
Buffy McQuillen
Yokayo Pomo, Yuki, Nomlaki

COMMISSIONER
Wayne Nelson
Luiseño

COMMISSIONER
Stanley Rodriguez
Kumeyaay

EXECUTIVE SECRETARY
Christina Snider
Pomo

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

Native American Heritage Commission
Native American Contact List
Ventura County
12/23/2021

Barbareno/Ventureno Band of Mission Indians
Julie Tumamait-Stenslie, Chairperson
365 North Poli Ave — Chumash
Ojai, CA, 93023
Phone: (805) 646 - 6214
jtumamait@hotmail.com

Barbareno/ Ventureno Band of Mission Indians
Brenda Guzman,
58 N. Ann Street, #8 — Chumash
Ventura, CA, 93001
Phone: (209) 601 - 4676
brendamguzman@gmail.com

Barbareno/ Ventureno Band of Mission Indians
Annette Ayala,
188 S. Santa Rosa Street — Chumash
Ventura, CA, 93001
Phone: (805) 515 - 9844
annetteayala78@yahoo.com

Barbareno/ Ventureno Band of Mission Indians
Patrick Tumamait,
992 El Camino Corto — Chumash
Ojai, CA, 93023
Phone: (805) 216 - 1253

Chumash Council of Bakersfield
Julio Quair, Chairperson
729 Texas Street — Chumash
Bakersfield, CA, 93307
Phone: (661) 322 - 0121
chumashtribe@sbcglobal.net

Coastal Band of the Chumash Nation
Mariza Sullivan, Chairperson
P. O. Box 4464 — Chumash
Santa Barbara, CA, 93140
Phone: (805) 665 - 0486
cbcntribalchair@gmail.com

Northern Chumash Tribal Council
Violet Walker, Chairperson
P.O. Box 6533 — Chumash
Los Osos, CA, 93412
Phone: (760) 549 - 3532
violetsagewalker@gmail.com

San Luis Obispo County Chumash Council
Mark Vigil, Chief
1030 Ritchie Road — Chumash
Grover Beach, CA, 93433
Phone: (805) 481 - 2461
Fax: (805) 474-4729

Santa Ynez Band of Chumash Indians
Kenneth Kahn, Chairperson
P.O. Box 517 — Chumash
Santa Ynez, CA, 93460
Phone: (805) 688 - 7997
Fax: (805) 686-9578
kkahn@santaynezchumash.org

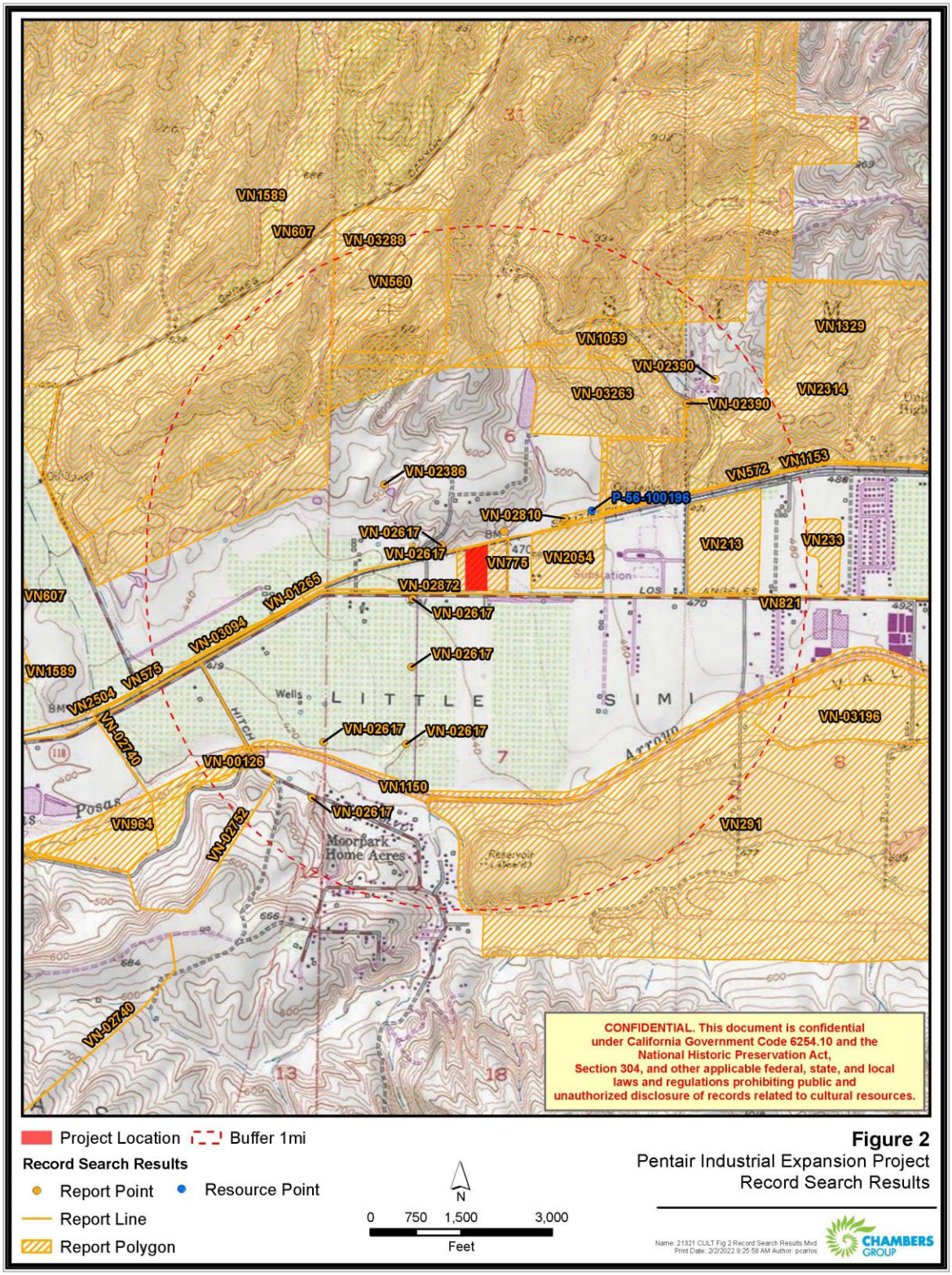
This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed 21321 Pentair Industrial Expansion Project, Ventura County.

CONFIDENTIAL. This document is confidential under California Government Code 6254.10 and the National Historic Preservation Act, Section 304, and other applicable federal, state, and local laws and regulations prohibiting public and unauthorized disclosure of records related to cultural resources. Recipients of this document acknowledge they are authorized to receive these materials and are responsible for maintaining the confidential nature of the contents related to cultural resources identified in this document and will not disclose confidential information to the public and/or unauthorized persons.

ATTACHMENT B (CONFIDENTIAL) – RECORD SEARCH RESULTS

Attachment B (Confidential): Record Search Results



Appendix B - Energy Calculations

Construction-Related Petroleum Fuels

The off-road construction equipment fuel usage was calculated through use of the off-road equipment assumptions utilized in the CalEEMod model run provided in Appendix A and the fuel usage calculations provided in the 2017 Off-road Diesel Emission Factors spreadsheet, prepared by CARB (https://ww3.arb.ca.gov/msei/ordiesel.htm). The Spreadsheet provides the following formula to calculate fuel usage from off-road equipment:

Fuel Used = Load Factor x Horsepower x Total Operational Hours x BSFC / Unit Conversion

Where:

Load Factor - Obtained from CalEEMod default values

Horsepower – Obtained from CalEEMod default values

Total Operational Hours – Calculated by multiplying CalEEMod default daily hours by the estimated number of working days for each phase of construction

BSFC – Brake Specific Fuel Consumption (pounds per horsepower-hour) – If less than 100 Horsepower = 0.408, if greater than 100 Horsepower = 0.367

Unit Conversion – Converts pounds to gallons = 7.109

The Following Table shows the off-road construction equipment fuel calculations based on the above formula, which shows that the off-road equipment utilized during construction of the proposed project would consume 37,226 gallons of fuel.

Off-Road Construction Equipment Modeled in CalEEMod and Fuel Used

Equipment Type	Equipment Quantity	Horse-Power	Load Factor	Operating Hours Per Day	Total Operational Hours[1]	Fuel Used (gallons)
Site Preparation						
Rubber Tired Dozer	3	247	0.4	8	240	1,224
Tractors/Loaders/Backhoes	4	97	0.37	7	320	659
Grading						
Excavator	1	158	0.38	8	160	496
Grader	1	187	0.41	8	160	633
Rubber Tired Dozer	1	247	0.4	8	160	816
Tractors/Loaders/Backhoes	3	97	0.37	8	480	989
Building Construction						
Crane	1	231	0.29	7	1,610	5,568
Forklifts	3	89	0.2	8	5,520	5,639
Generator Set	1	84	0.74	8	1,840	6,564

Equipment Type	Equipment Quantity	Horse-Power	Load Factor	Operating Hours Per Day	Total Operational Hours[1]	Fuel Used (gallons)
Tractors/Loaders/Backhoes	3	97	0.37	7	4,830	9,949
Welders	1	46	0.45	8	1,840	2,186
Paving						
Pavers	2	130	0.42	8	320	902
Paving Equipment	2	132	0.36	8	320	785
Rollers	2	80	0.38	8	320	558
Architectural Coatings						
Air Compressor	1	78	0.48	6	120	258
Total Off-Road Equipment Fuel used during Construction of the Proposed Project (gallons)						**37,226**

Notes:

[1] Based on 10 days for Site Preparation, 20 days for Grading , 230 days for Building Construction, 20 days for Paving, and 20 days for Architectural Coatings.

Source: CalEEMod Version 2020.4.0, CARB, 2018.

The on-road construction-related vehicle trips fuel usage was calculated through use of the default construction vehicle trip assumptions from the CalEEMod model run. The calculated total construction miles were then divided by the fleet average for Ventura County miles per gallon rates for the year 2023 that were calculated through use of the EMFAC2017 model (https://www.arb.ca.gov/emfac/2017/) and the EMFAC2017 model printouts are attached. The following Table shows the on-road construction vehicle trips modeled in CalEEMod and the fuel usage calculations, which shows that the on-road construction-related vehicle trips would consume 14,806 gallons of fuel for the proposed Project.

On-Road Construction Vehicle Trips Modeled in CalEEMod and Fuel Used

Vehicle Trip Types	Daily Trips	Trip Length (miles)	Total per Day (miles)	Total per Phase (miles)	Fleet Average Miles per Gallon	Fuel Used (gallons)
Site Preparation						
Worker Trips	18	10.8	194	1,944	27.6	71
Grading						
Worker Trips	15	10.8	162	3,240	27.6	118
Building Construction						
Worker Trips	90	10.8	972	223,560	27.6	8,109
Vendor Trips	35	7.3	256	58,765	9.4	6,250
Paving						
Worker Trips	15	10.8	162	3,240	27.6	118
Architectural Coatings						
Worker Trips	18	10.8	194	3,888	27.6	141
Total On-Road Vehicle Fuel used during Construction of the Proposed Project (gallons)						**14,806**

Notes:

Vehicle Trip Types	Daily Trips	Trip Length (miles)	Total per Day (miles)	Total per Phase (miles)	Fleet Average Miles per Gallon	Fuel Used (gallons)

[1] Based on 10 days for Site Preparation, 20 days for Grading, 230 days for Building Construction, 20 days for Paving, and 20 days for Architectural Coatings..

Source: CalEEMod Version 2020.4.0, CARB, 2018.

Operations-Related Petroleum Fuels

The on-road operations-related vehicle trips fuel usage was calculated through use of the total annual vehicle miles traveled assumptions from the CalEEMod model run provided in Appendix A, which found that operation of the proposed project would generate 571,396 vehicle miles traveled per year. The calculated total operational miles were then divided by the Ventura County fleet average rate of 27.6 miles per gallon, which was calculated through use of the EMFAC2017 model for year 2023. The EMFAC2017 model printouts are attached to this Appendix. Based on the above calculation methodology, the operation of the proposed Project would consume 20,727 gallons of petroleum fuels per year.

Operations-Related Electricity Use

The operations-related electricity usage was calculated in the CalEEMod model run provided in Appendix A that depicts the electricity use from each land use that are shown below in kilo-watt hours (kWh) per year:

- Parking Lot (Truck Loading Area, Driveways, and Parking Lots) – 45,738 kWh/year
- Unrefrigerated Warehouse – 330,321 kWh/year
- General Office – 53,960 kWh/year

Based on the above, it is anticipated that the proposed project would utilize 430,019 kWh per year of electricity.

Operations-Related Natural Gas Use

The operations-related natural gas usage was calculated in the CalEEMod model run provided in Appendix A that depicts the natural gas use from each land use that are shown below in kilo British Thermal Units (kBTU) per year:

- Parking Lot (Truck Loading Area, Driveways, and Parking Lots) – 0 kBTU/year
- Unrefrigerated Warehouse – 313,402 kBTU/year
- General Office – 36,200 kBTU/year

Based on the above, it is anticipated that the proposed project will use 349,602 kBTU per year, which is equivalent to 350 mega-British Thermal units (MBTU) per year of natural gas.

EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: County
Region: VENTURA
Calendar Year: 2023
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption. Note 'day' in the unit is operation day.

Region	Calendar Y	Vehicle Ca	Model Yea	Speed	Fuel	Population	VMT	Trips	Fuel Consumption
VENTURA	2023	HHDT	Aggregate	Aggregate	GAS	1.584942	213.73213	31.71152	0.0467988
VENTURA	2023	LDA	Aggregate	Aggregate	GAS	291891	11389118	1372309	346.27487
VENTURA	2023	LDT1	Aggregate	Aggregate	GAS	32016.85	1160417.4	145081.3	41.858074
VENTURA	2023	LDT2	Aggregate	Aggregate	GAS	94375.81	3558570.1	437475.2	137.07261
VENTURA	2023	LHDT1	Aggregate	Aggregate	GAS	7709.39	276213.66	114858.4	25.841707
VENTURA	2023	LHDT2	Aggregate	Aggregate	GAS	1384.262	48905.246	20623.44	5.264898
VENTURA	2023	MCY	Aggregate	Aggregate	GAS	16218.89	80979.401	32437.78	2.2482873
VENTURA	2023	MDV	Aggregate	Aggregate	GAS	72044.43	2428532.4	327382.3	116.43824
VENTURA	2023	MH	Aggregate	Aggregate	GAS	2962.397	25120.172	296.3582	4.9266156
VENTURA	2023	MHDT	Aggregate	Aggregate	GAS	731.8971	37757.685	14643.8	7.1568797
VENTURA	2023	OBUS	Aggregate	Aggregate	GAS	238.7227	8995.1471	4776.363	1.7473959
VENTURA	2023	SBUS	Aggregate	Aggregate	GAS	71.82497	2854.4575	287.2999	0.3063043
VENTURA	2023	UBUS	Aggregate	Aggregate	GAS	59.38871	4428.2148	237.5548	0.8189129

vehicle miles per day (All Categories)	19022106	690	1,000 gall per day
		690,002	gallons per day
Fleet Avg Miles per gallon	27.6		

EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: County
Region: VENTURA
Calendar Year: 2023
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption. Note 'day' in the unit is operation day.

Region	Calendar Y	Vehicle Ca	Model Yea	Speed	Fuel	Population	VMT	Trips	Fuel Consumption
VENTURA	2023	HHDT	Aggregate	Aggregate	DSL	3189.254	346461.53	31284.61	48.25642
VENTURA	2023	LDA	Aggregate	Aggregate	DSL	3485.115	135978.93	16275.22	2.709975
VENTURA	2023	LDT1	Aggregate	Aggregate	DSL	24.24519	419.44513	78.03768	0.017157
VENTURA	2023	LDT2	Aggregate	Aggregate	DSL	673.5368	28721.979	3261.94	0.778107
VENTURA	2023	LHDT1	Aggregate	Aggregate	DSL	7767.324	291844.62	97703.17	13.78099
VENTURA	2023	LHDT2	Aggregate	Aggregate	DSL	2819.574	107185.9	35466.7	5.558593
VENTURA	2023	MDV	Aggregate	Aggregate	DSL	1701.253	67577.393	8180.928	2.409239
VENTURA	2023	MH	Aggregate	Aggregate	DSL	1090.161	9548.5315	109.0161	0.905546
VENTURA	2023	MHDT	Aggregate	Aggregate	DSL	5608.331	359036.92	57227.45	31.54999
VENTURA	2023	OBUS	Aggregate	Aggregate	DSL	143.201	8919.232	1273.734	0.912332
VENTURA	2023	SBUS	Aggregate	Aggregate	DSL	286.7253	8901.3913	3308.77	1.209614
VENTURA	2023	UBUS	Aggregate	Aggregate	DSL	33.42634	2717.9618	133.7053	0.451184

Diesel Truck (HHDT, MDV, MHDT) vehicle miles per day	773,076	82	1,000 gall per day
		82,216	gallons per day
Diesel Truck Fleet Avg Miles per gallon	9.4		

Updated Geotechnical Engineering Investigation

Proposed Industrial Warehouse Development
10941 W. Los Angeles Avenue
Moorpark, California

Amir Development Company
8730 Wilshire Boulevard, Suite 300
Beverly Hills, California 90211

Attn: Mr. Steven Juhnke

Project Number 21889-20
April 8, 2022

NorCal Engineering

NorCal Engineering

Soils and Geotechnical Consultants
10641 Humbolt Street Los Alamitos, CA 90720
(562) 799-9469 Fax (562) 799-9459

April 8, 2022 Project Number 21889-20

Amir Development Company
8730 Wilshire Boulevard, Suite 300
Beverly Hills, California 90211

Attn: Mr. Steven Juhnke

RE: **Updated Geotechnical Engineering Investigation** - Proposed Industrial Warehouse Development - Located at 10941 W. Los Angeles Avenue, in the City of Moorpark, California

Dear Mr. Juhnke:

Pursuant to your request, this firm has performed a Geotechnical Engineering Investigation for the above referenced project in accordance with your approval of our proposals dated February 16, 2022 and March 8, 2022. The purpose of this investigation is to evaluate the geotechnical conditions of the subject site and to provide updated recommendations for the proposed industrial warehouse development.

The scope of work included the following: 1) site reconnaissance; 2) subsurface geotechnical exploration and sampling; 3) laboratory testing; 4) soil infiltration testing; 5) engineering analysis of field and laboratory data; 5) preparation of a geotechnical engineering report. It is the opinion of this firm that the proposed development is feasible from a geotechnical standpoint provided that the recommendations presented in this report are followed in the design and construction of the project.

1.0 Project Description

It is proposed to construct an industrial warehouse development consisting of 90,566 square feet building as shown on the attached Site Plan by HPA Architecture. The proposed structure will be supported by a conventional slab-on-grade foundation system with perimeter-spread footings and isolated interior footings. Other improvements will include asphalt and concrete pavement areas, retaining walls, hardscape and landscaping. It is assumed that the proposed grading for the development will consist of minor cut and fill procedures on the order of a few feet to achieve finished grade elevations. Final building plans shall be reviewed by this firm prior to submittal for city/county approval to determine the need for any additional study and revised recommendations pertinent to the proposed development, if necessary.

2.0 Site Description

The 5.65-acre subject property is located within the 10500 block and north side of Los Angeles Avenue, in the City of Moorpark. The generally rectangular-shaped parcel is elongated in a north to south direction with topography of the relatively level property descending slightly from back to front direction on the order of a few feet. The site is currently occupied an undeveloped parcel of land covered with a low vegetation growth of natural grasses and weeds.

3.0 Site Exploration

The investigation was initially performed on June 25, 2020 with additional exploratory work completed later on March 24 and 25, 2022. The field investigation consisted of the placement of two (2) recent electronic cone penetrometers (CPT) both to depths of 50 feet, six (6) subsurface exploratory borings by a truck mounted drill rig with eight-inch outside diameter hollow-stem, continuous flight augers and a hand operated auger to depths ranging between 5 and 50 feet and five (5) exploratory trenches by a backhoe to depths ranging between 10 and 20 feet below current ground elevations.

The CPT consists of advancing a cone-tipped cylindrical probe into the ground while simultaneously measuring the resulting resistance to penetration. An on-field computer generated CPT log measures the penetration resistance values and inferred soil description. The boring and trench explorations were visually classified and logged by a field engineer with locations of the subsurface explorations shown on the attached Site Plan.

The field explorations revealed the existing earth materials to consist of fill and natural soil. Detailed descriptions of the subsurface conditions are listed on the boring logs in Appendix A. It should be noted that the transition from one soil type to another as shown on the boring logs is approximate and may in fact be a gradual transition. The soils encountered are described as follows:

Fill: A fill soil classifying as a brown, fine to medium grained, silty SAND was encountered to a depth of one foot below ground surface. These soils were noted to be loose and dry.

Natural: A natural undisturbed soil classifying as a brown, fine to coarse grained, silty SAND was encountered beneath the fill soils to a depth of 12 to 14 feet. The native soils were observed to be medium dense and moist. Deeper soils consisted of sandy to clayey silts to sands which were noted to depths of 43 to 50 feet that are medium dense to dense and moist to wet.

The overall engineering characteristics of the earth material were relatively uniform with each excavation. Groundwater was encountered at a depth of 23 feet below ground surface in Borings B-3 and B-6 and some caving of the cohesionless soils occurred to the depth of our borings. The subsurface conditions are shown graphically on Section A-A, Figure 2.

4.0 Laboratory Tests

Relatively undisturbed samples of the subsurface soils were obtained to perform laboratory testing and analysis for direct shear, consolidation tests, and to determine in-place moisture/densities. These relatively undisturbed ring samples were obtained by driving a thin-walled steel sampler lined with one-inch long brass rings with an inside diameter of 2.42 inches into the undisturbed soils.

Standard penetration tests were obtained by driving a steel sampler unlined with an inside diameter of 1.5 inches into the soils. This standard penetrometer sampler was driven a total of eighteen inches with blow counts tallied every six inches. Blow count data is given on the Boring Logs in Appendix A. Bulk bag samples were obtained in the upper soils for expansion index tests and maximum density tests. All test results are included in Appendix B, unless otherwise noted.

4.1 **Field Moisture Content** (ASTM: D 2216) and the dry density of the ring samples were determined in the laboratory. This data is listed on the logs of explorations.

4.2 **Sieve analyses** (ASTM: D 422-63) and the percent by weight of soil finer than the No. 200 sieve (ASTM: 1140) were performed on selected soil samples. These results are shown later within the body of this report.

4.3 **Maximum Density tests** (ASTM: D 1557) were performed on typical samples of the upper soils. Results of these tests are shown on Table I.

4.4 **Expansion Index tests** (ASTM: D 4829) were performed on remolded samples of the upper soils to determine expansive characteristics. Results of these tests are provided on Table II.

4.5 **Atterberg Limits** (ASTM: D 4318) consisting of liquid limit, plastic limit and plasticity index were performed on representative soil samples. Results are shown on Table III.

4.6 **Corrosion tests** consisting of sulfate, pH, resistivity and chloride analysis to determine potential corrosive effects of soils on concrete and underground utilities. Test results are provided on Table IV.

4.7 **R-Value test** per California Test Method 301 was performed on a representative sample, which may be anticipated to be near subgrade to determine pavement design. Results are provided within the pavement design section of the report.

4.8 **Direct Shear tests** (ASTM: D 3080) were performed on undisturbed and/or remolded samples of the subsurface soils. The test is performed under saturated conditions at loads of 1,000 lbs./sq.ft., 2,000 lbs./sq.ft., and 3,000 lbs./sq.ft. with results shown on Plate A.

4.9 **Consolidation tests** (ASTM: D 2435) were performed on undisturbed samples to determine the differential and total settlement which may be anticipated based upon the proposed loads. Water was added to the samples at a surcharge of one KSF and the settlement curves are plotted on Plates B and C.

5.0 Seismicity Evaluation

The proposed development lies outside of any Alquist Priolo Special Studies Zone and the potential for damage due to direct fault rupture is considered unlikely. The nearest fault is located less than 2 kilometers from the site and is capable of producing a Magnitude 6.7 earthquake. Ground shaking originating from earthquakes along other active faults in the region is expected to induce lower horizontal accelerations due to smaller anticipated earthquakes and/or greater distances to other faults. The following seismic design acceleration parameters for the project site are provided below based on the American Society of Civil Engineers (ASCE) website, https://asce7hazardtool.online/. The ASCE/SEI 7-22 report is attached is Appendix C.

Seismic Design Acceleration Parameters

Latitude	34.280
Longitude	-118.912
Site Class	D
Risk Category	II
Peak Ground Acceleration	PGA_M = 0.83
Adjusted Maximum Acceleration	S_{MS} = 2.15 S_{M1} = 1.69
Design Spectral Response Acceleration Parameters	S_{DS} = 1.44 S_{D1} = 1.13
Mapped Spectral Response Acceleration	S_S = 2.10 S_1 = 0.77

Use of these values is dependent on the latest requirements of the ASCE, 11-4.8, Exception 2 that requires the value of the seismic response coefficient C_s be determined by Equation 12.8.2 for values of $T \leq 1.5T_s$ and taken as equal to 1.5 times the value computed in accordance with either 12.8-3 for $T_L \geq T \geq 1.5T_s$ or Equation 12.8-4 for $T > T_L$. Computations and verification of these conditions is referred to the structural engineer.

6.0 Liquefaction Evaluation

The site is expected to experience ground shaking and earthquake activity that is typical of Southern California area. It is during severe ground shaking that loose, granular soils below the groundwater table can liquefy. A review of the exploratory boring log and the laboratory test results on selected soil samples obtained indicate the following soil classifications, field blowcounts and amounts of fines passing through the No. 200 sieve.

Field Blowcount and Gradation Data

Boring No.	Classification	Blowcounts (blows/ft)	Relative Density	% Passing No. 200 Sieve
B-3 @ 5'	SM	7	Medium Dense	15
B-3 @ 10'	SM	9	Medium Dense	31
B-3 @ 15'	ML/CL	4	Firm	61
B-3 @ 20'	CL	10	Medium Stiff	66
B-3 @ 25'	SM/SW	16	Medium Dense	8
B-3 @ 30'	CL	12	Firm	66
B-3 @ 35'	SW	21	Dense	4
B-3 @ 40'	SW	21	Dense	4
B-3 @ 45'	SW	32	Dense	7
B-3 @ 50'	SW	30	Dense	8

Based upon information in the California Division of Mines and Geology "Seismic Hazard Zone Map – Moorpark Quadrangle", dated November 17, 2000, the subject site is situated in an area of historic occurrence of liquefaction, or local geological, geotechnical and groundwater conditions to indicate a potential for permanent ground displacement.

Based on the California Division of Mines and Geology Seismic Hazard Zone Report for the Moorpark 7.5 Minute Quadrangle, the site is mapped with a historic groundwater depth of 20 feet deep. Our liquefaction evaluation utilized the nearest mode of predominate Magnitude 6.7 Mw earthquake in our earthquake in our calculations. The analysis indicates the potential for liquefaction at this site to be moderate based upon a historic groundwater depth of 20 feet deep and a Peak Ground Acceleration (PGA_M) of 0.83g.

The associated seismic-induced settlements would be on the order of 3½ inches and would occur rather uniformly across the site, as shown on Section A-A. Differential settlements would be on the order of 1¾ inch over a 50-foot (horizontal) distance in the building pad area.

It is recommended that a stiffened foundation system be utilized for the proposed structure to mitigate for the seismic-induced settlements. The stiffened system shall consist of a mat foundation at least 12 inches thick to support the new structure. Our seismic settlement calculations are included in Appendix C.

7.0 Infiltration Characteristics

Infiltration tests within the site were performed to provide preliminary infiltration rates for the purpose of planning and design of an on-site water disposal system field testing per Ventura County Technical Guidance Manual for Stormwater Quality Control Measures - Update 2011. A truck mounted Simco 2800 Drill Rig equipped with a hollow stem auger was used to excavate the exploratory borings to depths ranging between 5 and 11.5 below existing ground surface. The borings consisted of six-inch diameter test holes. A three-inch diameter perforated PVC casing with solid end cap was installed in the borings and then surrounded with gravel materials to prevent caving.

The infiltration holes were carefully filled with clean water and refilled after two initial readings. Based upon the initial rates of infiltration at each location, test measurements were measured at selected maximum intervals thereafter. Measurements were obtained by using an electronic tape measure with 1/16-inch divisions and timed with a stopwatch.

The field infiltration rate was computed using a reduction factor – R_f based on the field measurements with our calculations given in Appendix D. Based upon the results of our testing, the soils encountered in the planned on-site drainage disposal system area exhibit the following infiltration rates.

Boring/Test No.	Depth (feet)	Soil Classification	Field Infiltration Rate
B-1/TH-1	5.0'	Silty SAND	24.0 in/hr
B-2/TH-2	10.0	Silty SAND	16.4 in/hr
B-4/TH-3	11.0	Silty SAND	4.4 in/hr
B-5/TH-4	11.5	Silty SAND	9.4 in/hr

Groundwater was encountered at a depth of 23 feet below existing ground surface in Borings B-3 and B-6 across the subject site.

Based on the results of our field testing, the subsurface soils encountered in the proposed on-site drainage disposal system shall utilize the design infiltration rates based on the safety factor required by the county standard. All systems must meet the latest city and/or county specifications and the California Regional Water Quality Control Board (CRWQCB) requirements. .

8.0 Conclusions and Recommendations

Based upon our evaluations, the proposed development is acceptable from a geotechnical engineering standpoint. By following the recommendations and guidelines set forth in our report, the structures will be safe from excessive settlements under the anticipated design loadings and conditions. The proposed development shall meet all requirements of the City Building Ordinance and will not impose any adverse effect on existing adjacent structures.

The following recommendations are based upon soil conditions encountered in our field investigation; these near-surface soil conditions could vary across the site. Variations in the soil conditions may not become evident until the commencement of grading operations for the proposed development and revised recommendations from the soils engineer may be necessary based upon the conditions encountered.

It is recommended that site inspections be performed by a representative of this firm during all grading and construction of the development to verify the findings and recommendations documented in this report. Any unusual conditions which may be encountered in the course of the project development may require the need for additional study and revised recommendations.

8.1 Site Grading Recommendations

Any vegetation and/or demolition debris shall be removed and hauled from proposed grading areas prior to the start of grading operations. Existing vegetation shall not be mixed or disced into the soils. Any removed soils may be reutilized as compacted fill once any deleterious material or oversized materials (in excess of eight inches) is removed. Grading operations shall be performed in accordance with the attached *Specifications for Placement of Compacted Fill.*

8.1.1 **Removal and Recompaction Recommendations**

All disturbed soils and/or fill (about one foot below ground surface) shall be removed to competent native material, the exposed surface scarified to a depth of 12 inches, brought to within 2% of optimum moisture content and compacted to a minimum of 90% of the laboratory standard (ASTM: D-1557) prior to placement of any additional compacted fill soils, foundations, slabs-on-grade and pavement. Grading shall extend a minimum of five horizontal feet outside the edges of foundations or equidistant to the depth of fill placed, whichever is greater.

It is possible that isolated areas of undiscovered fill not described in this report are present on site; if found, these areas should be treated as discussed earlier. A diligent search shall also be conducted during grading operations in an effort to uncover any underground structures, irrigation or utility lines. If encountered, these structures and lines shall be either removed or properly abandoned prior to the proposed construction.

Any imported fill material should be preferably soil similar to the upper soils encountered at the subject site. All soils shall be approved by this firm prior to importing at the site and will be subjected to additional laboratory testing to assure concurrence with the recommendations stated in this report.

If placement of slabs-on-grade and pavement is not completed immediately upon completion of grading operations, additional testing and grading of the areas may be necessary prior to continuation of construction operations. Likewise, if adverse weather conditions occur which may damage the subgrade soils, additional assessment by the soils engineer as to the suitability of the supporting soils may be needed.

Care should be taken to provide or maintain adequate lateral support for all adjacent improvements and structures at all times during the grading operations and construction phase. Adequate drainage away from the structures, pavement and slopes should be provided at all times.

8.1.2 **Fill Blanket Recommendations**

Due to the potential for differential settlement of foundations placed on compacted fill and native materials, it is recommended that all foundations including floor slab areas be underlain by a uniform compacted fill blanket at least two feet in thickness. This fill blanket shall extend a minimum of five horizontal feet outside the edges of foundations or equidistant to the depth of fill placed, whichever is greater.

8.2 **Shrinkage and Subsidence**

Results of our in-place density tests reveal that the soil shrinkage will be on the order of 10 to 20% due to excavation and recompaction, based upon the assumption that the fill is compacted to 92% of the maximum dry density per ASTM standards. Subsidence should be 0.2 feet die to earthwork operations. The volume change does not include any allowance for vegetation or organic stripping, removal of subsurface improvements, or topographic approximations. Although these values are only approximate, they represent our best estimate of lost yardage, which will likely occur during grading. If more accurate shrinkage and subsidence factors are needed, it is recommended that field testing the actual equipment and grading techniques should be conducted.

8.3 **Temporary Excavations**

Temporary unsurcharged excavations in the existing site materials may be made at vertical inclinations up to 4 feet in height unless cohesionless soils are encountered. In areas where soils with little or no binder are encountered, where adverse geological conditions are exposed, or where excavations are adjacent to existing structures, shoring or flatter excavations may be required.

The temporary cut slope gradients given above do not preclude local raveling and sloughing. All excavations shall be made in accordance with the requirements of the soils engineer, CAL-OSHA and other public agencies having jurisdiction. Care should be taken to provide or maintain adequate lateral support for all adjacent improvements and structures at all times during the grading operations and construction phase.

8.4 **Foundation Design**

It is recommended that a stiffened foundation system be utilized for the proposed structure to mitigate for the seismic-induced settlements. The stiffened system shall consist of a mat foundation throughout the new structure. The mat foundation should be at least 12 inches thick and may be designed utilizing an allowable bearing capacity of 2,000 psf placed on a two feet compacted fill blanket. A one-third increase may be used when considering short-term loading and seismic forces.

Foundations for smaller structures (site walls, trash enclosure, etc. may use an allowable bearing value of 2,000 psf for an embedded depth of 24 inches on a two feet thick blanket of compacted fill soils. Any foundations located along property line where lateral overexcavation is not possible may utilize an allowable bearing capacity of 1,500 psf embedded into competent native soils. A representative of this firm shall inspect all foundation excavations prior to pouring concrete.

8.5 **Settlement Analysis**

Resultant pressure curves for the consolidation tests are shown on Plates B and C. Computations utilizing these curves and the recommended allowable soil bearing capacity reveal that the mat foundations will experience settlements on the order of 1 inch and differential settlements of ½ inch over a 30 feet (horizontal) distance in the building pad area.

8.6 **Lateral Resistance**

The following values may be utilized in resisting lateral loads imposed on the structure. Requirements of the California Building Code should be adhered to when the coefficient of friction and passive pressures are combined.

Coefficient of Friction - 0.40
Equivalent Passive Fluid Pressure = 250 lbs./cu.ft.
Maximum Passive Pressure = 2,500 lbs./cu.ft.

The passive pressure recommendations are valid only for approved compacted fill soils or competent native materials.

8.7 **Retaining Wall Design Parameters**

Active earth pressures against retaining walls will be equal to the pressures developed by the following fluid densities. These values are for **granular backfill material** placed behind the walls at various ground slopes above the walls.

Surface Slope of Retained Materials (Horizontal to Vertical	Equivalent Fluid Density (lb./cu.ft.)
Level	30
5 to 1	35
4 to 1	38
3 to 1	40
2 to 1	45

Any applicable short-term construction surcharges and seismic forces should be added to the above lateral pressure values. An equivalent fluid pressure of 45 pcf may be utilized for the restrained wall condition with a level grade behind the wall.

The seismic-induced lateral soil pressure for walls greater than 6 feet may be computed using a triangular pressure distribution with the maximum value at the top of the wall. The maximum lateral pressure of (20 pcf) H where H is the height of the retained soils above the wall footing should be used in final design of retaining walls. Sliding resistance values and passive fluid pressure values may be increased by 1/3 during short-term wind and seismic loading conditions.

All walls shall be waterproofed as needed and protected from hydrostatic pressure by a reliable permanent subdrain system. The subsurface drainage system shall consist of a four-inch diameter perforated PVC pipe encased with gravel and wrapped with filter fabric. The granular backfill to be utilized immediately adjacent to retaining walls shall consist of an approved select granular soil with a sand equivalency greater than 30. This backfill zone of free draining material shall consist of a wedge beginning a minimum of one horizontal foot from the base of the wall extending upward at an inclination of no less than ¾ to 1 (horizontal to vertical).

8.8 Slab Design

All concrete slabs shall be a minimum of six inches in thickness in the proposed service areas and four inches in office and hardscape and placed on approved subgrade soils. Additional reinforcement requirements and an increase in thickness of the slabs-on-grade may be necessary based upon proposed loading conditions in the structures and should be evaluated further by the project engineers and/or architect.

A vapor retarder (10-mil minimum thickness) should be utilized in areas which would be sensitive to the infiltration of moisture. This retarder shall meet requirements of ASTM E 96, *Water Vapor Transmission of Materials* and ASTM E 1745, *Standard Specification for Water Vapor Retarders used in Contact with Soil or Granular Fill Under Concrete Slabs.* The vapor retarder shall be installed in accordance with procedures stated in ASTM E 1643, *Standard practice for Installation of Water Vapor Retarders used in Contact with Earth or Granular Fill Under Concrete Slabs.*

The moisture retarder may be placed directly upon compacted subgrade soils conditioned to near optimum moisture levels, although one to two inches of sand beneath the membrane is desirable. The subgrade upon which the retarder is placed shall be smooth and free of rocks, gravel or other protrusions which may damage the retarder. Use of sand above the retarder is under the purview of the structural engineer; if sand is used over the retarder, it should be placed in a dry condition.

8.9 Pavement Section Design

The table below provides a preliminary pavement design based upon an R-Value of 53 for the subgrade soils for the proposed pavement areas. Final pavement design may need to be based on R-Value testing of the subgrade soils near the conclusion of site grading to assure that these soils are consistent with those assumed in this preliminary design.

Type of Traffic	Traffic Index	Asphalt (in.)	Base Material (in.)
Automobile Parking Stalls	4.0	3.0	3.0
Light Vehicle Circulation Areas	6.0	3.5	5.5
Heavy Truck Access	7.0	4.0	8.0

Any concrete slab-on-grade in pavement areas shall be a minimum of six inches in thickness and placed on approved subgrade soils. All pavement areas shall have positive drainage toward an approved outlet from the site. Drain lines behind curbs and/or adjacent to landscape areas should be considered by client and the appropriate design engineers to prevent water from infiltrating beneath pavement. If such infiltration occurs, damage to pavement, curbs and flow lines, especially on sites with expansive soils, may occur during the life of the project.

Any approved base material shall consist of a Class II aggregate or equivalent and should be compacted to a minimum of 95% relative compaction. All pavement materials shall conform to the requirements set forth by the City of Moorpark. The base material; and asphaltic concrete should be tested prior to delivery to the site and during placement to determine conformance with the project specifications. A pavement engineer shall designate the specific asphalt mix design to meet the required project specifications.

8.10 Utility Trench and Excavation Backfill

Trenches from installation of utility lines and other excavations may be backfilled with on-site soils or approved imported soils compacted to a minimum of 90% relative compaction. All utility lines shall be properly bedded with clean sand having a sand equivalency rating of 30 or more. This bedding material shall be thoroughly water jetted around the pipe structure prior to placement of compacted backfill soils.

8.11 Corrosion Design Criteria

Representative samples of the surficial soils, typical of the subgrade soils expected to be encountered within foundation excavations and underground utilities were tested for corrosion potential. The minimum resistivity value obtained for the samples tested is representative of an environment that may be severely corrosive to metals. The soil pH value was considered mildly acidic and may not have a significant effect on soil corrosivity. Consideration should be given to corrosion protection systems for buried metal such as protective coatings, wrappings or the use of PVC where permitted by local building codes.

According to Table 4.3.1 of ACI 318 Building Code and Commentary, these contents revealed negligible sulfate concentrations. Therefore, a Type II cement according to latest CBC specifications may be utilized for building foundations at this time. It is recommended that additional sulfate tests be performed at the completion of site grading to assure that the as graded conditions are consistent with the recommendations stated in this design. Corrosion test results may be found on the attached Table IV.

8.12 Expansive Soil

Granular soils were noted in the upper 12 feet with a very low expansion potential. Expansive clay soils were encountered from 12 to 26 feet deep. If any expansive soils are encountered, special attention should be given to the project design and maintenance.

9.0 Closure

The recommendations and conclusions contained in this report are based upon the soil conditions uncovered in our test excavations. No warranty of the soil condition between our excavations is implied. NorCal Engineering should be notified for possible further recommendations if unexpected to unfavorable conditions are encountered during construction phase. It is the responsibility of the owner to ensure that all information within this report is submitted to the Architect and appropriate Engineers for the project.

A preconstruction conference should be held between the developer, general contractor, grading contractor, city inspector, architect, and geotechnical engineer to clarify any questions relating to the grading operations and subsequent construction. Our representative should be present during the grading operations and construction phase to certify that such recommendations are complied within the field.

This geotechnical investigation has been conducted in a manner consistent with the level of care and skill exercised by members of our profession currently practicing under similar conditions in the Southern California area. No other warranty, expressed or implied is made.

We appreciate this opportunity to be of service to you. If you have any further questions, please do not hesitate to contact the undersigned.

Respectfully submitted,
NORCAL ENGINEERING

Keith D. Tucker
Project Engineer
R.G.E. 841

REGISTERED PROFESSIONAL ENGINEER
KEITH D. TUCKER
No. 841
Exp. 12/31/2022
GEOTECHNICAL
STATE OF CALIFORNIA

Scott D. Spensiero
Project Manager

References

1. American Society of Civil Engineers (ASCE) website, https://asce7hazardtool.online/

2. California Building Code, 2019.

3. California Department of Water Resources, Internet Website, http://www.water.ca.gov/waterdatalibrary/index.cfm.

4. California Division of Mines and Geology, 2000, Seismic Hazard Zone for the Moorpark 7.5-Minute Quadrangle, Ventura County, California - Seismic Hazard Zone Report 041.

5. California Division of Mines and Geology, 2008, Guidelines for Evaluating and Mitigating Seismic Hazards in California: Special Publication 117A.

6. Earthquake Zones of Required Investigation, Seismic Hazard Zones, Moorpark Quadrangle, published by the California Geological Survey.

7. NorCal Engineering Inc. - Geotechnical Engineering Investigation – Proposed Industrial Warehouse - Located at 10951 Los Angeles Avenue, in the City of Moorpark ..... dated July 14, 2020.

8. Thomas W. Dibblee, Jr. - Geologic Map of the Moorpark Quadrangle, Ventura County, California 1992.

9. Ventura County Technical Guidance Manual for Stormwater Quality Control Measures - Update 2011.

SPECIFICATIONS FOR PLACEMENT OF COMPACTED FILL

Excavation

Any existing low-density soils and/or saturated soils shall be removed to competent natural soil under the inspection of the Geotechnical Engineering Firm. After the exposed surface has been cleansed of debris and/or vegetation, it shall be scarified until it is uniform in consistency, brought to the proper moisture content and compacted to a minimum of 90% relative compaction (in accordance with ASTM: D 1557).

In any area where a transition between fill and native soil or between bedrock and soil are encountered, additional excavation beneath foundations and slabs will be necessary in order to provide uniform support and avoid differential settlement of the structure.

Material for Fill

The on-site soils or approved import soils may be utilized for the compacted fill provided they are free of any deleterious materials and shall not contain any rocks, brick, asphaltic concrete, concrete or other hard materials greater than eight inches in maximum dimensions. Any import soil must be approved by the Geotechnical Engineering firm a minimum of 72 hours prior to importation of site.

Placement of Compacted Fill Soils

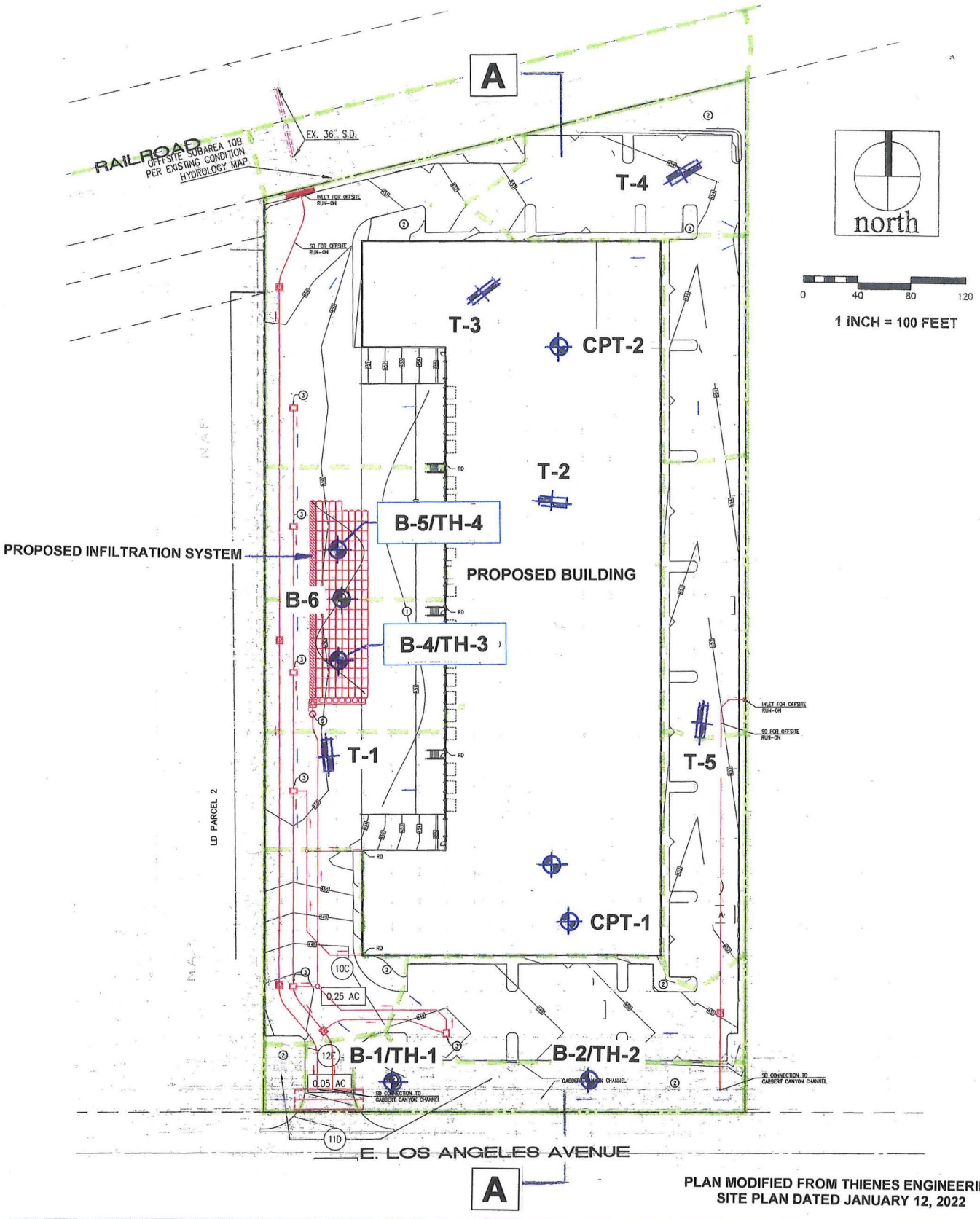
The approved fill soils shall be placed in layers not excess of six inches in thickness. Each lift shall be uniform in thickness and thoroughly blended. The fill soils shall be brought to within 2% of the optimum moisture content, unless otherwise specified by the Soils Engineering firm. Each lift shall be compacted to a minimum of 90% relative compaction (in accordance with ASTM: D 1557) and approved prior to the placement of the next layer of soil. Compaction tests shall be obtained at the discretion of the Geotechnical Engineering firm but to a minimum of one test for every 500 cubic yards placed and/or for every 2 feet of compacted fill placed.

The minimum relative compaction shall be obtained in accordance with accepted methods in the construction industry. The final grade of the structural areas shall be in a dense and smooth condition prior to placement of slabs-on-grade or pavement areas. No fill soils shall be placed, spread or compacted during unfavorable weather conditions. When the grading is interrupted by heavy rains, compaction operations shall not be resumed until approved by the Geotechnical Engineering firm.

Grading Observations

The controlling governmental agencies should be notified prior to commencement of any grading operations. This firm recommends that the grading operations be conducted under the observation of a Geotechnical Engineering firm as deemed necessary. A 24-hour notice must be provided to this firm prior to the time of our initial inspection.

Observation shall include the clearing and grubbing operations to assure that all unsuitable materials have been properly removed; approve the exposed subgrade in areas to receive fill and in areas where excavation has resulted in the desired finished grade and designate areas of overexcavation; and perform field compaction tests to determine relative compaction achieved during fill placement. In addition, all foundation excavations shall be observed by the Geotechnical Engineering firm to confirm that appropriate bearing materials are present at the design grades and recommend any modifications to construct footings.



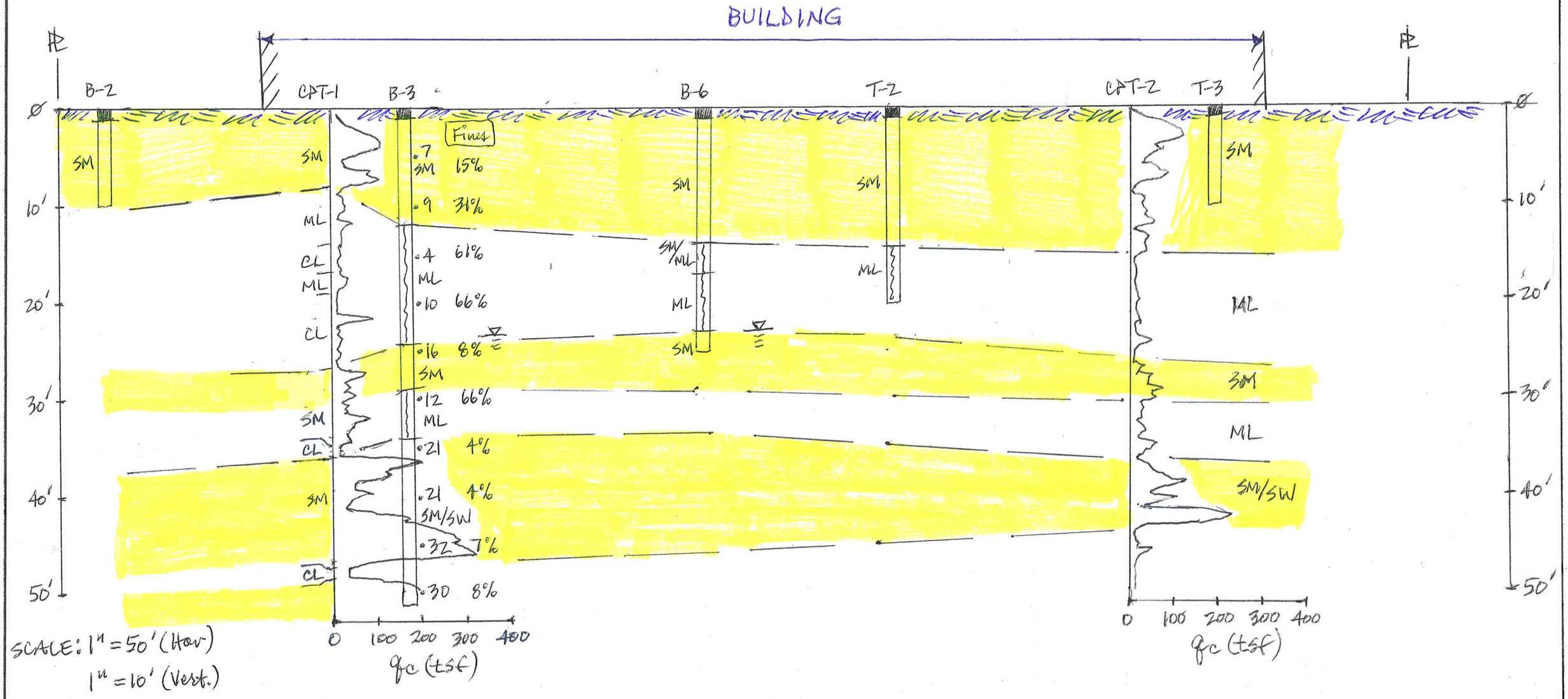
PLAN MODIFIED FROM THIENES ENGINEERING
SITE PLAN DATED JANUARY 12, 2022

NorCal Engineering

SOILS AND GEOTECHNICAL CONSULTANTS

SITE PLAN

PROJECT: 21889-20	DATE: APRIL 2022



SCALE: 1" = 50' (Hor.)
1" = 10' (Vert.)

NorCal Engineering SOILS AND GEOTECHNICAL CONSULTANTS	
PROJECT 21889-20	DATE APRIL 2022

SECTION A-A

List of Appendices
(in order of appearance)

Appendix A – Log of Excavations

Log of Borings B-1 to B-6
Log of Trenches T-1 to T-5
Log of CPT-1 and CPT-2

Appendix B – Laboratory Tests

Table I – Maximum Dry Density
Table II – Expansion
Table III – Atterberg Limits
Table IV – Corrosion
Plate A – Direct Shear
Plates B and C - Consolidation

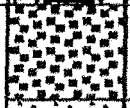
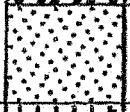
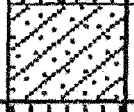
Appendix C – Liquefaction Analysis

ASCE/SEI 7-22 Seismic Design Report
Geology and Seismic Hazard Zones Maps
Liquefaction Calculations

Appendix D – Soil Infiltration Data

Field Data Sheets and Calculations

Appendix A
Log of Excavations

MAJOR DIVISION			GRAPHIC SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
	SAND AND SANDY SOILS	CLEAN SAND (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SANDS WITH FINE (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND-SILT MIXTURES
				SC	CLAYEY SANDS, SAND-CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

UNIFIED SOIL CLASSIFICATION SYSTEM

KEY:

 Indicates 2.5-inch Inside Diameter. Ring Sample.

 Indicates 2-inch OD Split Spoon Sample (SPT).

 Indicates Shelby Tube Sample.

 Indicates No Recovery.

 Indicates SPT with 140# Hammer 30 in. Drop.

 Indicates Bulk Sample.

 Indicates Small Bag Sample.

 Indicates Non-Standard

 Indicates Core Run.

COMPONENT PROPORTIONS

DESCRIPTIVE TERMS	RANGE OF PROPORTION
Trace	1 - 5%
Few	5 - 10%
Little	10 - 20%
Some	20 - 35%
And	35 - 50%

COMPONENT DEFINITIONS

COMPONENT	SIZE RANGE
Boulders	Larger than 12 in
Cobbles	3 in to 12 in
Gravel	3 in to No 4 (4.5mm)
Coarse gravel	3 in to 3/4 in
Fine gravel	3/4 in to No 4 (4.5mm)
Sand	No. 4 (4.5mm) to No. 200 (0.074mm)
Coarse sand	No. 4 (4.5 mm) to No. 10 (2.0 mm)
Medium sand	No. 10 (2.0 mm) to No. 40 (0.42 mm)
Fine sand	No. 40 (0.42 mm) to No. 200 (0.074 mm)
Silt and Clay	Smaller than No. 200 (0.074 mm)

MOISTURE CONTENT

DRY	Absence of moisture, dusty, dry to the touch.
DAMP	Some perceptible moisture; below optimum
MOIST	No visible water; near optimum moisture content
WET	Visible free water, usually soil is below water table.

RELATIVE DENSITY OR CONSISTENCY VERSUS SPT N -VALUE

COHESIONLESS SOILS		COHESIVE SOILS		
Density	N (blows/ft)	Consistency	N (blows/ft)	Approximate Undrained Shear Strength (psf)
Very Loose	0 to 4	Very Soft	0 to 2	< 250
Loose	4 to 10	Soft	2 to 4	250 - 500
Medium Dense	10 to 30	Medium Stiff	4 to 8	500 - 1000
Dense	30 to 50	Stiff	8 to 15	1000 - 2000
Very Dense	over 50	Very Stiff	15 to 30	2000 - 4000
		Hard	over 30	> 4000

Amir Development Company
21889-20

Log of Boring B-1

Boring Location: 10941 W Los Angeles Ave, Moorpark

Date of Drilling: 6/25/2020 | **Groundwater Depth:** None Encountered

Drilling Method: Simco 2800HS

Hammer Weight: 140 lbs | **Drop:** 30"

Surface Elevation: Not Measured

Depth (feet)	Lith-ology	Material Description	Samples: Type	Samples: Blow Counts	Laboratory: Moisture	Laboratory: Dry Density	Laboratory: Fines Content %
0		FILL Silty (fine to medium grained) SAND Brown, loose, dry					
		NATURAL Silty (fine to medium grained) SAND Brown, medium dense, moist; with occasional gravel					
5		Boring completed at depth of 5'					
10							
15							
20							
25							
30							
35							

GWT not encountered

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\21889-20.log Date: 4/11/2022

NorCal Engineering

Amir Development Company
21889-20

Log of Boring B-2

Boring Location: 10941 W Los Angeles Ave, Moorpark

Date of Drilling: 6/25/2020 | **Groundwater Depth:** None Encountered

Drilling Method: Simco 2800HS

Hammer Weight: 140 lbs | **Drop:** 30"

Surface Elevation: Not Measured

Depth (feet)	Lith-ology	Material Description	Samples: Type	Samples: Blow Counts	Laboratory: Moisture	Laboratory: Dry Density	Laboratory: Fines Content %
0		FILL Silty (fine to medium grained) SAND Brown, loose, dry					
		NATURAL Silty (fine to medium grained) SAND Brown, medium dense, moist; with occasional gravel					
5		GWT not encountered					
10		Boring completed at depth of 10'					
15							
20							
25							
30							
35							

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\21889-20.log Date: 4/11/2022

Amir Development Company
21889-20

Log of Boring B-3

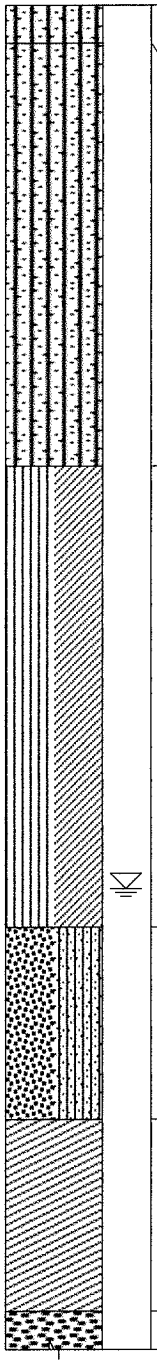
Boring Location: 10941 W Los Angeles Ave, Moorpark

Date of Drilling: 6/25/2020 | **Groundwater Depth:** 23'

Drilling Method: Simco 2800HS

Hammer Weight: 140 lbs | **Drop:** 30"

Surface Elevation: Not Measured



Depth (feet)	Material Description	Samples: Type	Samples: Blow Counts	Laboratory: Moisture	Laboratory: Dry Density	Laboratory: Fines Content %
0	FILL Silty (fine to medium grained) SAND Brown, loose, dry					
	NATURAL Silty (fine to medium grained) SAND Brown, medium dense, moist; with occasional gravel					
5		X	3/3/4	8.2		15
10		X	3/4/5	10.3		31
	Sandy to Clayey SILT Brown, firm, moist to wet					
15		X	2/2/2	16.6		61
20		X	2/5/5	27.1		66
	Silty (fine to medium grained) SAND Light brown, medium dense, wet; slightly silty to silty					
25		X	4/7/9	18.5		8
	Clayey SILT Brown, firm, wet					
30		X	3/5/7	26.9		66
	SAND (fine to medium grained) Light brown, medium dense, wet					
35						

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\21889-20.log Date: 4/11/2022

NorCal Engineering

Amir Development Company
21889-20

Log of Boring B-3

Boring Location: 10941 W Los Angeles Ave, Moorpark

Date of Drilling: 6/25/2020 | **Groundwater Depth:** 23'

Drilling Method: Simco 2800HS

Hammer Weight: 140 lbs | **Drop:** 30"

Surface Elevation: Not Measured

Depth (feet)	Lith-ology	Material Description	Samples: Type	Samples: Blow Counts	Laboratory: Moisture	Laboratory: Dry Density	Laboratory: Fines Content %
35		SAND (fine to medium grained) Light brown, medium dense, wet		8/9/12	19.5		4
40				8/9/12	19.5		4
45				9/13/19	17.8.		7
50				10/12/18	16.4		8
		Boring completed at depth of 51.5'					
55							
60							
65							
70							

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\21889-20.log Date: 4/11/2022

NorCal Engineering

Amir Development Company
21889-20

Log of Trench T-1

Boring Location: 10941 W Los Angeles Ave, Moorpark

Date of Drilling: 6/25/2020 | **Groundwater Depth:** None Encountered

Drilling Method: Backhoe

Hammer Weight: | **Drop:**

Surface Elevation: Not Measured

Depth (feet)	Lith-ology	Material Description	Samples: Type	Samples: Blow Counts	Laboratory: Moisture	Laboratory: Dry Density	Laboratory: Fines Content %
0		FILL Silty (fine to medium grained) SAND Brown, loose, dry					
		NATURAL Silty (fine to medium grained) SAND Brown, medium dense, moist; with occasional gravel			5.2	102.8	
5					4.2	104.7	
10		Trench completed at depth of 10'					
15							
20							
25							
30							
35							

GWT not encountered

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\21889-20.log Date: 4/11/2022

NorCal Engineering

Amir Development Company
21889-20

Log of Trench T-2

Boring Location: 10941 W Los Angeles Ave, Moorpark

Date of Drilling: 6/25/2020 | Groundwater Depth: None Encountered

Drilling Method: Backhoe

Hammer Weight: | Drop:

Surface Elevation: Not Measured

Depth (feet)	Lith-ology	Material Description	Samples: Type	Samples: Blow Counts	Laboratory: Moisture	Laboratory: Dry Density	Laboratory: Fines Content %
0		FILL Silty (fine to medium grained) SAND Brown, loose, dry	■		7.5	100.9	
		NATURAL Silty (fine to medium grained) SAND Brown, medium dense, moist; with occasional gravel					
5			■		7.8	106.9	
10			■		8.5	107.2	
15		Sandy to Clayey SILT Brown, firm, moist	■		11.7	110.1	
20		Trench completed at depth of 20'	■		18.8	105.6	
25							
30							
35							

GWT not encountered

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\21889-20.log Date: 4/11/2022

NorCal Engineering

Amir Development Company
21889-20

Log of Trench T-3

Boring Location: 10941 W Los Angeles Ave, Moorpark

Date of Drilling: 6/25/2020 | **Groundwater Depth:** None Encountered

Drilling Method: Backhoe

Hammer Weight: | **Drop:**

Surface Elevation: Not Measured

Depth (feet)	Lith-ology	Material Description	Samples: Type	Samples: Blow Counts	Laboratory: Moisture	Laboratory: Dry Density	Laboratory: Fines Content %
0		FILL Silty (fine to medium grained) SAND Brown, loose, dry					
		NATURAL Silty (fine to coarse grained) SAND Brown, medium dense, moist; with occasional gravel	■		11.4	105.2	
5			■		5.9	103.2	
10		Trench completed at depth of 10'					
15							
20							
25							
30							
35							

GWT not encountered

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\21889-20.log Date: 4/11/2022

Amir Development Company
21889-20

Log of Trench T-4

Boring Location: 10941 W Los Angeles Ave, Moorpark

Date of Drilling: 6/25/2020 | **Groundwater Depth:** None Encountered

Drilling Method: Backhoe

Hammer Weight: | **Drop:**

Surface Elevation: Not Measured

Depth (feet)	Lith-ology	Material Description	Samples: Type	Samples: Blow Counts	Laboratory: Moisture	Laboratory: Dry Density	Laboratory: Fines Content %
0		FILL Silty (fine to medium grained) SAND Brown, loose, dry	■		3.9	107.7	
		NATURAL Silty (fine to coarse grained) SAND Brown, medium dense, moist; with occasional gravel					
5			■		6.0	105.1	
10		Trench completed at depth of 10'					
15							
20							
25							
30							
35							

GWT not encountered

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\21889-20.log Date: 4/11/2022

NorCal Engineering

Amir Development Company
21889-20

Log of Trench T-5

Boring Location: 10941 W Los Angeles Ave, Moorpark

Date of Drilling: 6/25/2020 | **Groundwater Depth:** None Encountered

Drilling Method: Backhoe

Hammer Weight: | **Drop:**

Surface Elevation: Not Measured

Depth (feet)	Lithology	Material Description	Samples: Type	Samples: Blow Counts	Laboratory: Moisture	Laboratory: Dry Density	Laboratory: Fines Content %
0		FILL Silty (fine to medium grained) SAND Brown, loose, dry					
		NATURAL Silty (fine to coarse grained) SAND Brown, medium dense, moist; with occasional gravel and cobble	■		4.3	108.1	
5			■		5.2	106.0	
10		Trench completed at depth of 10'					
15							
20							
25							
30							
35							

GWT not encountered

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\21889-20.log Date: 4/11/2022

NorCal Engineering

Amir Development Company
21889-20

Log of Boring B-4

Boring Location: 10941 W Los Angeles Ave, Moorpark

Date of Drilling: 3/24/2022 | Groundwater Depth: None Encountered

Drilling Method: Simco 2800HS

Hammer Weight: 140 lbs | Drop: 30"

Surface Elevation: Not Measured

Depth (feet)	Lith-ology	Material Description	Samples: Type	Samples: Blow Counts	Laboratory: Moisture	Laboratory: Dry Density	Laboratory: Fines Content %
0		FILL Silty (fine to medium grained) SAND Brown, loose, moist					
		NATURAL Silty (fine to medium grained) SAND Brown, medium dense, moist; with occasional gravel					
5			X	3/3/4	8.2		15
10			X	3/4/5	10.3		31
		Boring completed at depth of 11'					
15							
20							
25							
30							
35							

GWT not encountered

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\21889-20.log Date: 4/11/2022

NorCal Engineering

Amir Development Company
21889-20

Log of Boring B-5

Boring Location: 10941 W Los Angeles Ave, Moorpark

Date of Drilling: 3/24/2022 | **Groundwater Depth:** None Encountered

Drilling Method: Simco 2800HS

Hammer Weight: 140 lbs | **Drop:** 30"

Surface Elevation: Not Measured

Depth (feet)	Lith-ology	Material Description	Samples: Type	Samples: Blow Counts	Laboratory: Moisture	Laboratory: Dry Density	Laboratory: Fines Content %
0		FILL Silty (fine to medium grained) SAND Brown, loose, moist					
		NATURAL Silty (fine to medium grained) SAND Brown, medium dense, moist; with occasional gravel					
5			⊠	3/3/4	8.2		15
10			⊠	3/4/5	10.3		31
		Boring completed at depth of 11.5'					
15							
20							
25							
30							
35							

GWT not encountered

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\21889-20.log Date: 4/11/2022

NorCal Engineering

Amir Development Company
21889-20

Log of Boring B-6

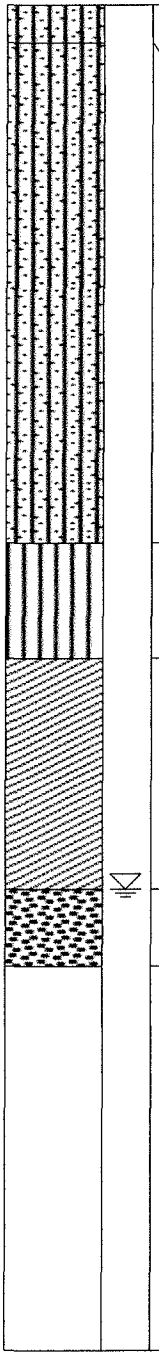
Boring Location: 10941 W Los Angeles Ave, Moorpark

Date of Drilling: 3/24/2022 | Groundwater Depth: 23'

Drilling Method: Simco 2800HS

Hammer Weight: 140 lbs | Drop: 30"

Surface Elevation: Not Measured



Depth (feet)	Material Description	Samples: Type	Samples: Blow Counts	Laboratory: Moisture	Laboratory: Dry Density	Laboratory: Fines Content %
0	FILL Silty (fine to medium grained) SAND Brown, loose, moist					
	NATURAL Silty (fine to medium grained) SAND Brown, medium dense, moist; with occasional gravel					
5		X	3/3/4	8.2		15
10		X	3/4/5	10.3		31
15	Sandy SILT Brown, firm, moist	X	2/2/2	16.6		61
	Clayey SILT Brown, firm, moist to wet Groundwater @ 23' bgs					
20		X	2/5/5	27.1		66
	Silty (fine to coarse grained) SAND Light brown, medium dense, wet; slightly silty					
25	Boring completed at depth of 25'	X	4/7/9	18.5		8
30						
35						

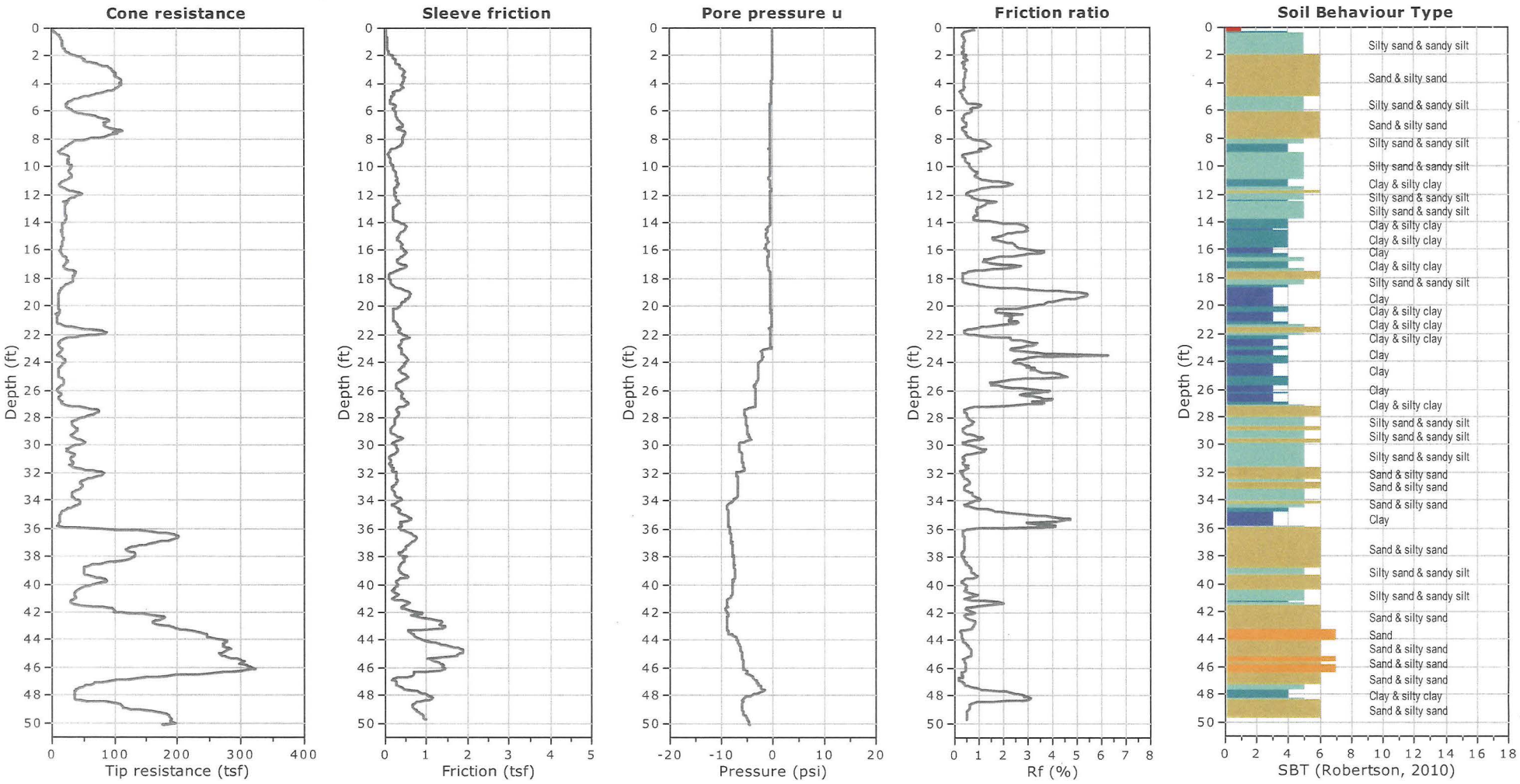
SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\21889-20.log Date: 4/11/2022

NorCal Engineering

Kehoe Testing and Engineering
714-901-7270
steve@kehoetesting.com
www.kehoetesting.com

Project: **Amir Development Company**
Location: **10941 W. Los Angeles Avenue, Moorpark CA**

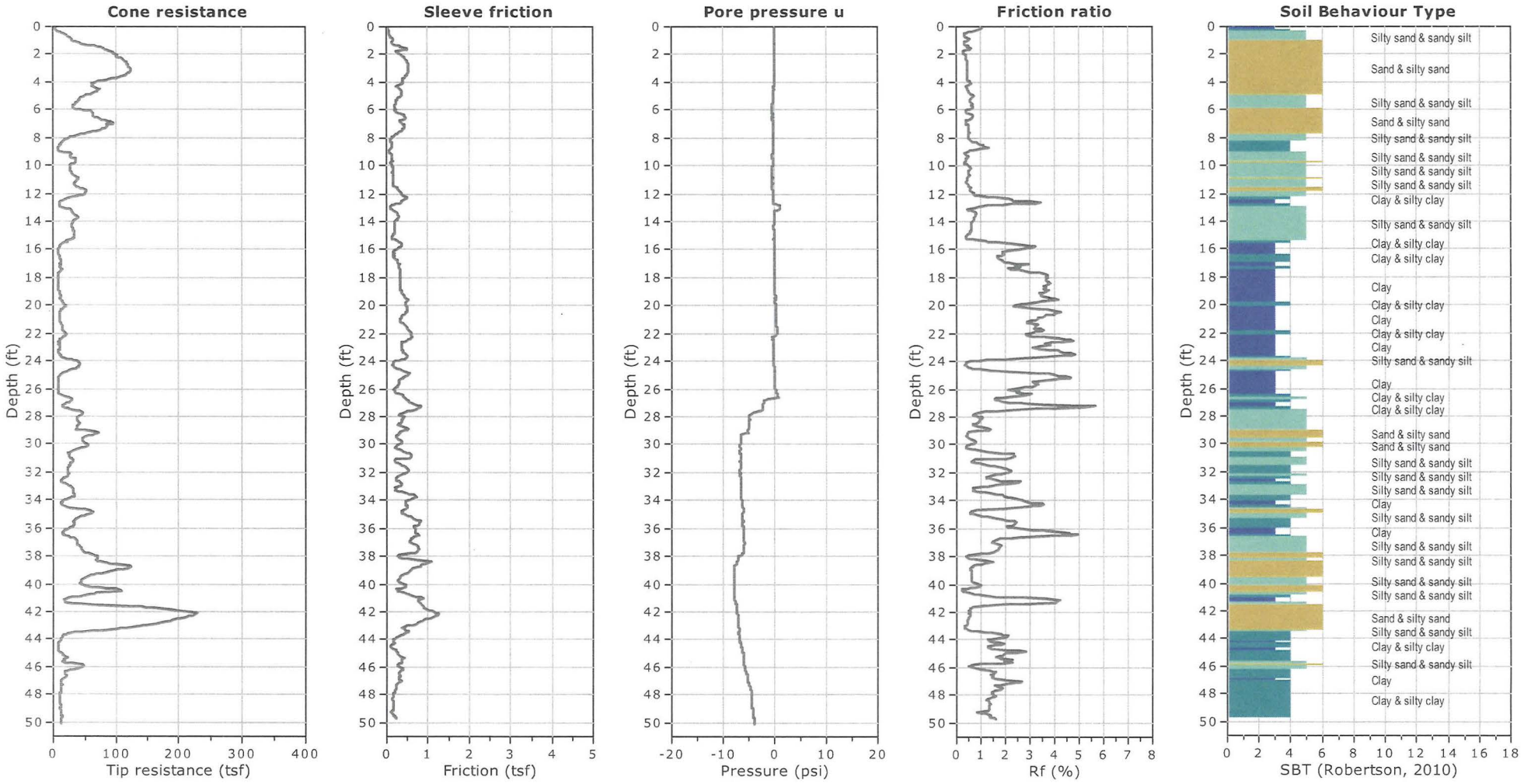
CPT-1
Total depth: 50.13 ft, Date: 3/25/2022



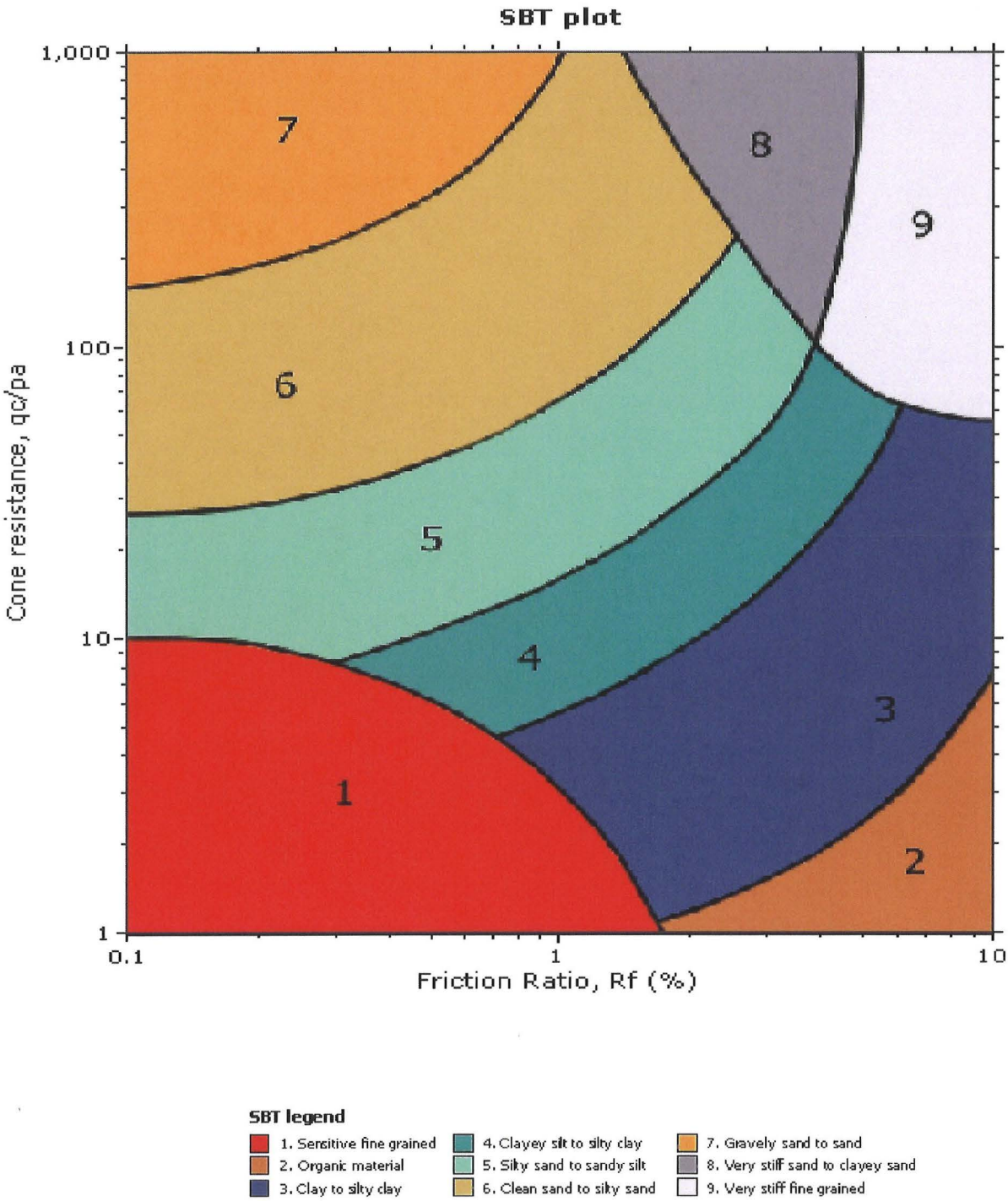
Kehoe Testing and Engineering
714-901-7270
steve@kehoetesting.com
www.kehoetesting.com

Project: **Amir Development Company**
Location: **10941 W. Los Angeles Avenue, Moorpark CA**

CPT-2
Total depth: 50.13 ft, Date: 3/25/2022



Kehoe Testing and Engineering
714-901-7270
rich@kehoetesting.com
www.kehoetesting.com



Depth (ft)	Tip Stress (tsf)	Sleeve Stre (tsf)	Pore Pressu (psi)	Ratio (%)
0	0.37	0.0168	-0.094	4.581
0.081	2.29	0.0183	-0.094	0.799
0.155	2.84	0.024	-0.094	0.845
0.2	3.39	0.024	0	0.708
0.276	4.58	0.024	0	0.524
0.329	5.68	0.0258	-0.016	0.454
0.411	8.33	0.0328	0	0.394
0.468	10.34	0.0363	-0.016	0.351
0.526	11.9	0.0415	0	0.349
0.597	13.55	0.0481	0	0.355
0.665	14.37	0.0549	0	0.382
0.742	15.01	0.0601	0	0.4
0.796	15.56	0.0642	0	0.413
0.862	16.11	0.0726	0	0.451
0.929	16.38	0.0725	0	0.442
0.989	16.29	0.0688	0	0.422
1.051	16.48	0.066	0	0.4
1.136	16.93	0.066	0	0.39
1.197	17.12	0.066	0	0.385
1.258	17.94	0.066	0	0.368
1.324	18.67	0.0676	0	0.362
1.386	19.59	0.0704	0	0.359
1.45	19.95	0.0728	0	0.365
1.512	20.6	0.0747	0	0.363
1.577	21.6	0.0793	0	0.367
1.644	22.7	0.088	0	0.387
1.729	25.36	0.0934	0	0.369
1.778	27.09	0.0977	0	0.36
1.838	30.85	0.1088	0	0.353
1.913	35.61	0.1524	0	0.428
1.978	39.27	0.1932	0	0.492
2.042	42.38	0.2076	0	0.49
2.101	46.22	0.19	0	0.411
2.173	48.33	0.1921	0	0.398
2.245	52.45	0.2623	0	0.5
2.304	50.8	0.2795	0	0.55
2.369	53.91	0.2699	0	0.501
2.43	58.76	0.2699	0	0.459
2.496	62.34	0.2525	0	0.405
2.564	71.85	0.2542	0	0.354
2.63	76.8	0.347	0	0.452
2.699	83.94	0.3479	0	0.414
2.757	90.53	0.3479	0	0.384
2.827	92.45	0.3684	0	0.399

2.893	96.84	0.3967	-0.038	0.41
2.984	97.3	0.4366	0	0.449
3.025	96.57	0.4562	-0.062	0.472
3.087	100.14	0.4811	0	0.48
3.16	99.04	0.4793	-0.066	0.484
3.217	101.97	0.4469	-0.068	0.438
3.285	102.43	0.4455	-0.069	0.435
3.348	101.42	0.4525	-0.096	0.446
3.424	101.33	0.4421	-0.101	0.436
3.484	104.35	0.4633	-0.101	0.444
3.547	105.81	0.4812	-0.101	0.455
3.611	108.56	0.4758	-0.113	0.438
3.699	110.57	0.4598	-0.115	0.416
3.745	110.76	0.4541	-0.117	0.41
3.807	110.48	0.4465	-0.136	0.404
3.879	110.85	0.4416	-0.136	0.398
3.951	109.84	0.4348	-0.136	0.396
4.007	110.94	0.4232	-0.094	0.382
4.075	111.31	0.408	-0.165	0.367
4.139	110.02	0.4041	-0.159	0.367
4.209	107.64	0.4397	-0.159	0.409
4.274	105.63	0.447	-0.174	0.423
4.335	101.97	0.4117	-0.174	0.404
4.4	99.68	0.3959	-0.178	0.397
4.497	95.56	0.357	-0.178	0.374
4.533	90.62	0.2909	-0.198	0.321
4.597	82.47	0.1991	-0.198	0.241
4.666	77.9	0.2047	-0.198	0.263
4.727	73.5	0.2209	-0.255	0.301
4.791	67.92	0.2281	-0.282	0.336
4.861	60.96	0.1921	-0.309	0.315
4.925	53.18	0.1787	-0.328	0.336
4.987	47.69	0.1694	-0.328	0.355
5.054	43.2	0.1648	-0.348	0.381
5.13	36.06	0.1502	-0.348	0.417
5.19	33.5	0.1474	-0.348	0.44
5.259	30.11	0.1459	-0.374	0.485
5.332	27.92	0.1395	-0.374	0.5
5.404	26.09	0.1297	-0.374	0.497
5.454	24.81	0.1323	-0.374	0.533
5.524	23.71	0.2111	-0.468	0.89
5.599	23.71	0.2697	-0.468	1.138
5.648	23.71	0.2525	-0.468	1.065
5.729	25.45	0.2296	-0.468	0.902
5.779	27.64	0.2079	-0.468	0.752
5.845	30.85	0.2106	-0.468	0.683
5.914	31.12	0.223	-0.484	0.716

5.98	34.42	0.2411	-0.484	0.701
6.041	36.89	0.2574	-0.489	0.698
6.127	42.38	0.2596	-0.489	0.613
6.182	47.41	0.2534	-0.489	0.534
6.257	55.01	0.257	-0.478	0.467
6.307	60.14	0.2583	-0.468	0.429
6.404	70.21	0.2738	-0.468	0.39
6.447	75.24	0.2895	-0.468	0.385
6.521	83.66	0.3066	-0.468	0.367
6.579	87.32	0.3099	-0.468	0.355
6.649	91.35	0.3219	-0.468	0.352
6.717	90.98	0.347	-0.468	0.381
6.759	89.34	0.364	-0.468	0.407
6.851	84.49	0.3938	-0.468	0.466
6.89	83.57	0.4101	-0.468	0.491
6.975	84.67	0.4296	-0.468	0.507
7.024	82.84	0.4259	-0.468	0.514
7.117	84.85	0.4306	-0.468	0.507
7.166	87.69	0.3763	-0.468	0.429
7.233	94.37	0.3105	-0.468	0.329
7.3	103.89	0.344	-0.468	0.331
7.378	109.38	0.3945	-0.468	0.361
7.449	113.04	0.4371	-0.468	0.387
7.488	113.23	0.4571	-0.468	0.404
7.56	97.48	0.4811	-0.468	0.494
7.616	104.72	0.4917	-0.468	0.47
7.679	99.41	0.4852	-0.468	0.488
7.749	92.63	0.4693	-0.468	0.507
7.824	84.67	0.461	-0.468	0.544
7.885	76.98	0.4428	-0.468	0.575
7.97	63.52	0.4192	-0.562	0.66
8.011	57.21	0.4222	-0.468	0.738
8.084	46.41	0.429	-0.562	0.924
8.155	39.45	0.4229	-0.468	1.072
8.242	34.87	0.4393	-0.468	1.26
8.282	32.95	0.434	-0.468	1.317
8.334	31.3	0.423	-0.468	1.351
8.425	27.55	0.4015	-0.468	1.457
8.48	25.72	0.3892	-0.468	1.513
8.537	23.8	0.3626	-0.562	1.524
8.605	21.69	0.3066	-0.562	1.413
8.668	18.86	0.2424	-0.749	1.286
8.732	16.57	0.1705	-0.655	1.029
8.804	14.46	0.1447	-0.655	1.001
8.866	12.63	0.1371	-0.655	1.085
8.936	11.62	0.1208	-0.655	1.039
9.002	12.45	0.0981	-0.655	0.788

9.083	15.84	0.0789	-0.468	0.498
9.13	18.58	0.0794	-0.468	0.427
9.198	24.9	0.0885	-0.468	0.355
9.259	27.92	0.0976	-0.468	0.35
9.343	28.83	0.1095	-0.468	0.38
9.403	28.1	0.1198	-0.468	0.426
9.456	26.82	0.1218	-0.468	0.454
9.537	26.18	0.1153	-0.468	0.44
9.583	26.09	0.1179	-0.562	0.452
9.649	26.45	0.1252	-0.562	0.473
9.712	27.74	0.1349	-0.562	0.486
9.792	25.54	0.1629	-0.562	0.638
9.844	30.21	0.1786	-0.562	0.591
9.915	31.67	0.1866	-0.562	0.589
9.982	31.76	0.1944	-0.562	0.612
10.072	31.03	0.2019	-0.562	0.651
10.116	30.3	0.2024	-0.562	0.668
10.175	29.38	0.2125	-0.562	0.723
10.245	28.74	0.2309	-0.562	0.804
10.333	28.1	0.2517	-0.562	0.896
10.383	28.28	0.2693	-0.562	0.952
10.465	29.02	0.277	-0.562	0.955
10.511	29.66	0.2775	-0.562	0.936
10.572	31.76	0.2739	-0.655	0.862
10.643	32.59	0.2771	-0.655	0.85
10.731	31.85	0.2865	-0.749	0.899
10.765	30.66	0.2857	-0.749	0.932
10.858	26.82	0.2857	-0.749	1.065
10.923	24.07	0.2779	-0.655	1.154
10.961	22.43	0.2804	-0.655	1.25
11.05	18.49	0.3001	-0.655	1.623
11.095	17.12	0.3105	-0.655	1.814
11.183	14.55	0.3217	-0.655	2.21
11.222	13.64	0.3218	-0.655	2.359
11.287	12.91	0.308	-0.562	2.386
11.359	13.27	0.2971	-0.562	2.239
11.426	15.29	0.2889	-0.562	1.89
11.485	17.67	0.2691	-0.468	1.523
11.566	21.69	0.2414	-0.281	1.113
11.63	24.81	0.2359	-0.187	0.951
11.7	30.48	0.2359	-0.281	0.774
11.764	35.15	0.2384	-0.468	0.678
11.855	43.75	0.2496	-0.562	0.57
11.893	45.58	0.2446	-0.562	0.537
11.943	48.15	0.2399	-0.562	0.498
12.022	47.69	0.2399	-0.562	0.503
12.083	42.84	0.2399	-0.562	0.56

12.167	37.99	0.2675	-0.562	0.704
12.206	35.61	0.2603	-0.562	0.731
12.283	31.12	0.2503	-0.562	0.804
12.347	28.65	0.2619	-0.562	0.914
12.42	27.46	0.2849	-0.655	1.038
12.477	26.91	0.3323	-0.655	1.235
12.534	19.77	0.3439	-0.624	1.739
12.6	24.81	0.3487	-0.624	1.406
12.667	24.53	0.3334	-0.624	1.359
12.746	23.34	0.3043	-0.562	1.304
12.833	21.6	0.2549	-0.655	1.18
12.88	21.42	0.224	-0.655	1.046
12.927	21.24	0.2042	-0.655	0.962
13.011	21.33	0.1985	-0.655	0.931
13.071	21.33	0.1936	-0.655	0.908
13.144	21.51	0.1883	-0.655	0.876
13.192	21.51	0.1939	-0.655	0.901
13.263	21.51	0.1965	-0.655	0.913
13.324	21.51	0.2046	-0.655	0.951
13.413	21.51	0.2033	-0.655	0.945
13.46	21.05	0.197	-0.655	0.936
13.546	22.52	0.1868	-0.655	0.83
13.594	23.25	0.1885	-0.655	0.811
13.655	24.35	0.1916	-0.655	0.787
13.727	24.44	0.1852	-0.655	0.758
13.787	23.89	0.1905	-0.655	0.798
13.865	22.15	0.2525	-0.655	1.14
13.927	21.51	0.3101	-0.655	1.442
13.993	21.05	0.3567	-0.655	1.694
14.059	19.59	0.4025	-0.655	2.055
14.129	17.85	0.453	-0.655	2.538
14.173	17.39	0.49	-0.655	2.817
14.246	17.21	0.5111	-0.749	2.97
14.351	16.84	0.5022	-0.936	2.982
14.397	16.84	0.4993	-0.936	2.964
14.443	16.84	0.493	-0.936	2.927
14.519	16.57	0.4841	-1.216	2.922
14.578	16.02	0.4762	-1.17	2.973
14.66	15.84	0.4354	-1.17	2.75
14.721	16.2	0.4097	-1.17	2.529
14.788	16.38	0.3742	-1.31	2.284
14.83	16.57	0.3572	-1.216	2.156
14.935	17.48	0.3325	-1.216	1.902
14.977	17.94	0.3244	-1.216	1.808
15.033	18.49	0.313	-1.216	1.693
15.11	18.86	0.2978	-1.123	1.579
15.161	18.95	0.2965	-1.123	1.565

15.23	18.76	0.306	-1.03	1.631
15.291	18.4	0.3214	-0.936	1.747
15.378	17.76	0.359	-0.842	2.021
15.427	17.39	0.3842	-0.936	2.209
15.498	16.93	0.4066	-1.123	2.401
15.552	16.75	0.4113	-1.216	2.455
15.646	16.2	0.4071	-1.216	2.512
15.688	16.2	0.4058	-1.216	2.505
15.752	15.74	0.4058	-1.31	2.578
15.822	15.38	0.4058	-1.591	2.639
15.885	14.92	0.4147	-1.591	2.78
15.962	14.28	0.4449	-1.123	3.116
16.017	13.82	0.4728	-0.936	3.421
16.094	13.73	0.5035	-0.842	3.667
16.162	14	0.5125	-0.842	3.659
16.212	14.55	0.4983	-0.842	3.424
16.296	15.74	0.4774	-0.842	3.032
16.35	16.75	0.4581	-0.842	2.735
16.409	18.22	0.4312	-0.842	2.367
16.492	20.87	0.3879	-0.936	1.859
16.543	22.52	0.3601	-1.123	1.599
16.624	23.8	0.3204	-1.123	1.346
16.672	24.53	0.2984	-1.123	1.217
16.736	24.81	0.2971	-1.123	1.198
16.8	24.62	0.2909	-1.03	1.181
16.882	23.89	0.3115	-1.03	1.304
16.936	23.07	0.3365	-0.936	1.459
17.027	21.6	0.4289	-0.936	1.986
17.072	21.14	0.4854	-0.936	2.296
17.164	19.95	0.5416	-0.936	2.714
17.208	19.86	0.4778	-0.842	2.405
17.28	20.78	0.3826	-0.749	1.841
17.329	22.24	0.3593	-0.749	1.615
17.398	27.92	0.3318	-0.749	1.188
17.456	33.23	0.2885	-0.749	0.868
17.532	39.18	0.2233	-0.655	0.57
17.587	36.61	0.1712	-0.655	0.468
17.656	37.44	0.1311	-0.655	0.35
17.73	36.8	0.1137	-0.562	0.309
17.799	35.33	0.108	-0.562	0.306
17.857	34.69	0.108	-0.562	0.311
17.927	34.69	0.108	-0.562	0.311
17.995	34.69	0.1093	-0.562	0.315
18.048	34.97	0.1118	-0.562	0.32
18.133	35.24	0.1159	-0.562	0.329
18.181	34.87	0.1165	-0.562	0.334
18.259	32.49	0.1237	-0.562	0.381

18.32	29.66	0.1383	-0.562	0.466
18.405	26.54	0.1672	-0.562	0.63
18.448	24.16	0.1784	-0.562	0.738
18.519	20.87	0.2016	-0.562	0.966
18.581	18.86	0.2427	-0.562	1.287
18.658	16.38	0.3145	-0.562	1.92
18.716	14.92	0.3748	-0.562	2.512
18.769	13.91	0.4271	-0.562	3.07
18.847	13	0.496	-0.562	3.816
18.9	12.63	0.5354	-0.562	4.239
18.986	12.27	0.5877	-0.562	4.791
19.029	11.9	0.6053	-0.562	5.087
19.119	11.35	0.6118	-0.562	5.39
19.188	11.17	0.6074	-0.562	5.439
19.238	11.17	0.6019	-0.468	5.39
19.294	11.17	0.5944	-0.468	5.323
19.374	11.17	0.5709	-0.468	5.113
19.433	11.17	0.5479	-0.468	4.906
19.515	11.26	0.5075	-0.468	4.508
19.561	11.26	0.483	-0.468	4.29
19.642	11.08	0.4443	-0.468	4.011
19.699	10.98	0.4181	-0.468	3.806
19.761	10.98	0.4078	-0.468	3.713
19.832	10.98	0.3996	-0.468	3.638
19.888	11.26	0.3856	-0.468	3.425
19.962	11.62	0.3647	-0.468	3.138
20.054	11.72	0.3395	-0.468	2.898
20.1	11.62	0.3415	-0.468	2.938
20.149	11.62	0.2973	-0.468	2.557
20.212	11.53	0.2023	-0.468	1.754
20.277	12.08	0.2001	-0.374	1.656
20.368	12.36	0.2089	-0.468	1.691
20.414	12.36	0.2107	-0.468	1.705
20.48	11.35	0.2109	-0.374	1.858
20.549	7.32	0.205	-0.374	2.8
20.612	9.89	0.2011	-0.374	2.035
20.679	9.43	0.2058	-0.374	2.183
20.736	8.7	0.2017	-0.281	2.32
20.811	8.6	0.1991	-0.281	2.314
20.879	8.42	0.193	-0.281	2.292
20.947	8.51	0.1904	-0.281	2.237
21.007	8.79	0.1961	-0.281	2.231
21.081	9.24	0.2341	-0.281	2.533
21.16	9.61	0.2505	-0.187	2.607
21.196	10.16	0.2544	-0.187	2.503
21.275	12.63	0.284	-0.187	2.248
21.343	17.21	0.3056	-0.187	1.776

21.394	22.98	0.3078	-0.187	1.34
21.457	31.03	0.3425	-0.374	1.104
21.531	40.18	0.3719	-0.749	0.926
21.593	52.72	0.3532	-0.655	0.67
21.659	63.8	0.3542	-0.577	0.555
21.749	81.92	0.3229	-0.577	0.394
21.795	85.58	0.3273	-0.577	0.382
21.853	87.14	0.3445	-0.562	0.395
21.924	84.94	0.3943	-0.562	0.464
21.991	70.21	0.4229	-0.562	0.602
22.06	57.85	0.4759	-0.562	0.823
22.133	44.94	0.5311	-0.562	1.182
22.188	36.8	0.5672	-0.562	1.542
22.249	25.72	0.5902	-0.562	2.294
22.329	20.32	0.4651	-0.562	2.289
22.393	16.75	0.3927	-0.562	2.345
22.461	15.01	0.4108	-0.562	2.736
22.508	13.82	0.4102	-0.562	2.968
22.588	12.36	0.4004	-0.562	3.24
22.642	11.62	0.3946	-0.499	3.394
22.71	10.98	0.3643	-0.499	3.317
22.785	10.89	0.3417	-0.499	3.137
22.849	11.26	0.333	-0.468	2.958
22.91	12.36	0.3437	-0.374	2.781
23.003	15.38	0.3789	-0.374	2.464
23.037	16.75	0.3895	-0.842	2.325
23.116	17.48	0.3939	-1.965	2.253
23.191	15.74	0.3904	-2.246	2.48
23.233	14.83	0.3915	-2.246	2.64
23.32	11.81	0.3964	-2.152	3.357
23.369	10.8	0.4048	-2.059	3.748
23.427	10.44	0.4332	-2.09	4.151
23.493	7.6	0.4737	-2.09	6.235
23.557	13.55	0.4917	-2.09	3.63
23.63	15.29	0.5068	-1.965	3.315
23.699	17.67	0.5276	-2.059	2.987
23.76	19.59	0.5451	-2.059	2.783
23.821	21.33	0.5466	-2.059	2.563
23.901	21.42	0.5211	-2.433	2.433
23.981	20.69	0.4916	-2.714	2.377
24.034	19.31	0.4804	-2.901	2.487
24.092	17.67	0.4692	-2.995	2.656
24.15	16.48	0.4661	-2.995	2.829
24.245	15.01	0.4574	-2.995	3.047
24.285	14.28	0.4317	-2.995	3.023
24.348	13.55	0.3974	-2.995	2.934
24.423	11.99	0.393	-2.995	3.278

24.482	11.08	0.3639	-2.995	3.286
24.565	10.8	0.3331	-2.995	3.084
24.615	10.71	0.3559	-2.995	3.324
24.686	10.89	0.3755	-2.995	3.447
24.738	10.71	0.3875	-2.995	3.618
24.803	10.07	0.4096	-2.964	4.067
24.891	11.17	0.4845	-2.964	4.339
24.936	11.72	0.5164	-2.964	4.407
25.021	11.72	0.5405	-2.901	4.613
25.071	12.08	0.5434	-2.901	4.497
25.146	14.74	0.5136	-2.901	3.485
25.202	16.57	0.4776	-2.995	2.883
25.266	19.22	0.4351	-2.995	2.263
25.336	20.14	0.3799	-3.088	1.886
25.423	20.14	0.3104	-3.182	1.541
25.472	19.68	0.2812	-3.182	1.429
25.532	18.4	0.2722	-3.463	1.479
25.599	17.39	0.263	-3.557	1.512
25.692	14.65	0.2612	-3.463	1.784
25.745	12.91	0.2594	-3.557	2.01
25.807	11.17	0.2701	-3.463	2.419
25.865	10.44	0.2908	-3.463	2.786
25.923	9.52	0.313	-3.463	3.288
26.005	9.24	0.3423	-3.463	3.703
26.054	9.24	0.3562	-3.369	3.853
26.125	10.16	0.3852	-3.369	3.791
26.183	11.35	0.4064	-3.369	3.58
26.265	14.37	0.4139	-3.369	2.88
26.319	15.38	0.4049	-3.369	2.633
26.402	13.55	0.3952	-3.463	2.917
26.453	12.27	0.3948	-3.463	3.219
26.517	11.26	0.3944	-3.463	3.503
26.586	11.26	0.4109	-3.463	3.649
26.654	11.26	0.4458	-3.369	3.96
26.709	11.99	0.47	-3.401	3.919
26.782	15.93	0.5045	-3.432	3.168
26.839	16.2	0.5374	-3.432	3.317
26.91	15.74	0.574	-3.401	3.646
26.98	16.11	0.5719	-3.463	3.55
27.058	18.58	0.541	-3.369	2.911
27.101	22.61	0.5078	-3.369	2.246
27.175	34.23	0.426	-3.463	1.244
27.239	43.94	0.3449	-3.65	0.785
27.305	56.02	0.2974	-4.68	0.531
27.374	64.62	0.2715	-5.147	0.42
27.433	72.4	0.2703	-5.429	0.373
27.505	75.06	0.2854	-5.429	0.38

27.573	74.6	0.304	-5.429	0.407
27.628	73.04	0.3214	-5.429	0.44
27.699	69.2	0.3339	-5.429	0.482
27.763	66	0.3306	-5.429	0.501
27.828	61.05	0.3204	-5.429	0.525
27.909	56.66	0.2891	-5.335	0.51
27.969	51.08	0.2698	-5.335	0.528
28.027	47.14	0.2561	-5.335	0.543
28.09	42.75	0.2419	-5.335	0.566
28.173	37.9	0.2423	-5.335	0.639
28.219	35.33	0.2439	-5.335	0.69
28.297	32.4	0.243	-5.241	0.75
28.355	32.36	0.2411	-5.241	0.745
28.444	32.36	0.2307	-5.241	0.713
28.487	32.31	0.2236	-5.147	0.692
28.552	33.68	0.2094	-5.054	0.622
28.618	34.97	0.1833	-5.054	0.524
28.695	37.07	0.1556	-4.961	0.42
28.759	38.54	0.136	-5.054	0.353
28.813	39.73	0.1369	-5.054	0.345
28.891	40.28	0.1353	-5.054	0.336
28.955	39.63	0.1222	-5.054	0.308
29.021	38.54	0.1223	-5.054	0.317
29.072	36.71	0.142	-5.054	0.387
29.134	35.06	0.1738	-5.054	0.496
29.2	33.5	0.2044	-4.711	0.61
29.281	29.75	0.2538	-4.711	0.853
29.339	31.03	0.2872	-4.711	0.926
29.399	31.67	0.3599	-4.399	1.136
29.479	35.88	0.4197	-4.399	1.17
29.553	41.01	0.4043	-4.305	0.986
29.599	45.4	0.3792	-4.212	0.835
29.687	49.79	0.2639	-5.241	0.53
29.727	51.35	0.2289	-5.615	0.446
29.805	52.63	0.182	-6.364	0.346
29.863	50.62	0.1732	-6.551	0.342
29.948	43.94	0.2139	-6.458	0.487
29.999	39.36	0.249	-6.458	0.633
30.053	34.23	0.2779	-6.551	0.812
30.131	29.02	0.2796	-6.458	0.964
30.202	25.36	0.2878	-6.551	1.135
30.266	24.26	0.305	-6.458	1.257
30.315	25.4	0.3089	-6.458	1.216
30.399	24.16	0.3009	-6.458	1.245
30.449	25.45	0.2952	-6.271	1.16
30.533	30.66	0.2492	-6.177	0.813
30.594	36.43	0.215	-5.99	0.59

30.645	37.07	0.186	-6.083	0.502
30.711	36.06	0.139	-6.083	0.385
30.796	34.23	0.1104	-6.083	0.323
30.842	32.86	0.1109	-6.083	0.338
30.911	30.57	0.1063	-6.083	0.348
30.976	30.3	0.1146	-6.083	0.378
31.063	30.21	0.1253	-6.083	0.415
31.105	31.85	0.1244	-6.083	0.39
31.197	33.04	0.1159	-5.99	0.351
31.247	33.32	0.1159	-5.896	0.348
31.309	33.32	0.1132	-5.896	0.34
31.386	32.77	0.1396	-5.771	0.426
31.44	28.56	0.1613	-5.771	0.565
31.504	32.04	0.1461	-5.771	0.456
31.576	34.69	0.1751	-5.615	0.505
31.632	36.98	0.1986	-5.615	0.537
31.699	46.04	0.2135	-5.615	0.464
31.78	53.73	0.1658	-5.522	0.309
31.84	65.26	0.1596	-5.803	0.245
31.897	73.04	0.1941	-6.458	0.266
31.957	79.54	0.2473	-7.113	0.311
32.043	82.56	0.2519	-7.113	0.305
32.09	81.28	0.2519	-7.113	0.31
32.161	78.17	0.2519	-7.113	0.322
32.228	74.69	0.252	-6.926	0.337
32.295	69.29	0.2543	-6.926	0.367
32.363	63.52	0.2506	-6.926	0.394
32.444	57.21	0.2768	-6.926	0.484
32.491	52.91	0.2873	-6.926	0.543
32.581	47.6	0.2855	-6.926	0.6
32.625	46.22	0.2839	-6.832	0.614
32.713	44.49	0.2784	-6.832	0.626
32.757	45.13	0.2723	-6.739	0.603
32.817	46.59	0.2559	-6.739	0.549
32.895	48.42	0.2116	-6.739	0.437
32.95	49.43	0.1884	-6.739	0.381
33.011	48.79	0.1793	-6.832	0.367
33.072	47.69	0.178	-6.926	0.373
33.154	44.21	0.1691	-6.926	0.382
33.243	39.91	0.196	-6.926	0.491
33.29	37.44	0.2108	-6.926	0.563
33.336	35.97	0.2235	-6.926	0.621
33.427	33.5	0.2341	-6.926	0.699
33.474	32.68	0.2382	-6.832	0.729
33.54	32.49	0.241	-6.832	0.742
33.603	32.77	0.2346	-6.832	0.716
33.679	32.77	0.2646	-6.832	0.807

33.743	32.77	0.3124	-7.019	0.953
33.811	34.6	0.3545	-7.019	1.025
33.87	36.71	0.3863	-7.643	1.052
33.944	38.44	0.381	-7.643	0.991
33.993	42.29	0.3632	-7.643	0.859
34.082	45.95	0.2939	-7.768	0.64
34.125	45.86	0.2532	-8.423	0.552
34.219	44.39	0.1898	-8.798	0.427
34.261	43.3	0.1728	-8.798	0.399
34.327	40.55	0.1696	-8.891	0.418
34.39	38.26	0.2023	-8.891	0.529
34.472	33.23	0.2479	-8.891	0.746
34.528	30.11	0.29	-8.891	0.963
34.59	26.18	0.3409	-8.891	1.302
34.659	22.79	0.3548	-8.798	1.557
34.721	19.13	0.317	-8.798	1.657
34.796	16.75	0.3144	-8.798	1.877
34.845	15.65	0.3412	-8.798	2.18
34.931	14.1	0.4065	-8.798	2.884
34.998	13.73	0.4562	-8.798	3.323
35.048	13.55	0.5025	-8.798	3.709
35.108	13.64	0.5456	-8.798	4
35.198	13.36	0.5931	-8.704	4.438
35.241	13	0.6097	-8.704	4.691
35.326	13.09	0.6158	-8.704	4.705
35.378	13.27	0.6031	-8.704	4.544
35.434	13	0.5463	-8.704	4.203
35.508	12.17	0.3568	-8.704	2.931
35.589	10.98	0.3788	-8.704	3.449
35.643	10.34	0.3674	-8.704	3.552
35.726	9.98	0.406	-8.61	4.07
35.78	10.07	0.4094	-8.579	4.066
35.835	8.97	0.3589	-8.548	4.001
35.91	18.58	0.3406	-8.548	1.833
35.97	39.08	0.3684	-8.548	0.942
36.044	74.6	0.3596	-8.423	0.482
36.095	109.75	0.4059	-8.423	0.37
36.162	136.2	0.4626	-8.382	0.34
36.23	157.62	0.5177	-8.338	0.328
36.306	169.43	0.5762	-8.338	0.34
36.356	181.79	0.6188	-8.263	0.34
36.432	193.69	0.6653	-8.263	0.343
36.488	198.63	0.6918	-8.2	0.348
36.557	200.64	0.7316	-8.2	0.365
36.622	200.73	0.7579	-8.135	0.378
36.708	199.27	0.7657	-8.135	0.384
36.753	197.16	0.756	-8.087	0.383

36.824	191.12	0.7283	-8.087	0.381
36.886	184.44	0.6941	-8.087	0.376
36.947	172.91	0.6574	-7.955	0.38
37.011	164.76	0.6236	-8.049	0.378
37.077	153.96	0.6001	-7.955	0.39
37.157	147.64	0.5633	-7.862	0.382
37.212	139.59	0.5383	-7.862	0.386
37.279	133.37	0.5053	-7.862	0.379
37.34	128.42	0.4956	-7.862	0.386
37.424	122.56	0.4919	-7.862	0.401
37.471	119.91	0.4795	-7.768	0.4
37.539	116.8	0.4561	-7.768	0.39
37.602	118.9	0.4249	-7.862	0.357
37.666	125.58	0.3868	-7.768	0.308
37.733	129.98	0.3381	-7.862	0.26
37.808	132.82	0.34	-7.768	0.256
37.871	133.09	0.3648	-7.675	0.274
37.938	132.08	0.4608	-7.768	0.349
38	131.26	0.5144	-7.675	0.392
38.06	130.16	0.4194	-7.675	0.322
38.124	129.06	0.4262	-7.675	0.33
38.191	124.85	0.4536	-7.675	0.363
38.271	117.99	0.4627	-7.675	0.392
38.326	95.93	0.4534	-7.612	0.473
38.393	92.63	0.4306	-7.612	0.465
38.473	83.2	0.3793	-7.55	0.456
38.521	74.78	0.36	-7.55	0.481
38.596	65.17	0.3539	-7.487	0.543
38.651	59.31	0.3538	-7.581	0.596
38.723	53.73	0.3276	-7.581	0.61
38.799	50.89	0.3293	-7.581	0.647
38.846	50.44	0.3239	-7.394	0.642
38.92	50.89	0.3413	-7.394	0.671
39.005	50.53	0.3364	-7.394	0.666
39.051	50.89	0.3459	-7.3	0.68
39.113	50.71	0.3702	-7.394	0.73
39.18	50.44	0.3976	-7.394	0.788
39.249	51.53	0.4238	-7.394	0.822
39.307	53.46	0.4777	-7.394	0.894
39.376	56.84	0.5307	-7.394	0.934
39.45	64.9	0.5725	-7.44	0.882
39.514	73.68	0.5169	-7.487	0.702
39.587	79.82	0.3599	-7.487	0.451
39.64	85.4	0.3128	-7.768	0.366
39.718	88.15	0.2475	-7.675	0.281
39.792	86.41	0.2548	-7.862	0.295
39.848	81.1	0.2659	-7.862	0.328

39.941	71.12	0.2858	-7.862	0.402
39.965	71.12	0.2927	-7.862	0.411
40.027	63.52	0.3017	-7.862	0.475
40.113	58.67	0.2907	-7.893	0.495
40.167	54.19	0.2682	-7.924	0.495
40.23	48.51	0.2279	-7.924	0.47
40.307	45.77	0.2015	-7.924	0.44
40.364	44.03	0.2182	-7.862	0.496
40.441	41.28	0.1701	-7.955	0.412
40.49	39.45	0.2076	-7.955	0.526
40.581	37.35	0.2676	-7.955	0.717
40.634	36.61	0.2738	-7.955	0.748
40.714	37.35	0.3256	-7.955	0.872
40.761	35.7	0.342	-7.862	0.958
40.857	37.35	0.2719	-8.143	0.728
40.903	38.44	0.2176	-8.236	0.566
40.988	37.44	0.1503	-8.61	0.401
41.011	36.8	0.1662	-8.798	0.452
41.08	34.6	0.2394	-8.891	0.692
41.157	32.31	0.3959	-8.891	1.225
41.227	30.66	0.5423	-8.891	1.769
41.299	29.93	0.5983	-8.891	1.999
41.343	30.39	0.5976	-8.891	1.967
41.411	35.24	0.5394	-8.985	1.531
41.484	45.77	0.4478	-8.891	0.978
41.554	67.74	0.401	-8.798	0.592
41.609	80.46	0.3968	-8.891	0.493
41.684	91.81	0.3927	-9.172	0.428
41.747	96.94	0.4455	-9.172	0.46
41.803	98.67	0.5254	-9.172	0.532
41.876	99.77	0.6579	-8.954	0.659
41.955	99.04	0.8288	-8.954	0.837
41.997	108.56	0.8908	-8.954	0.821
42.065	127.23	0.8835	-8.704	0.694
42.134	145.36	0.7629	-8.704	0.525
42.194	158.81	0.6345	-8.704	0.4
42.263	173.18	0.7924	-8.798	0.458
42.326	178.31	0.7568	-8.985	0.424
42.389	178.86	0.8873	-9.078	0.496
42.464	175.84	1.1022	-9.078	0.627
42.551	168.79	1.2711	-9.078	0.753
42.596	165.49	1.336	-9.078	0.807
42.661	161.1	1.3708	-9.078	0.851
42.728	161.15	1.3764	-9.078	0.854
42.788	161.19	1.3351	-8.985	0.828
42.857	167.87	1.3141	-8.985	0.783
42.941	179.59	1.3931	-8.985	0.776

42.998	185.45	1.4507	-8.985	0.782
43.06	192.59	1.4382	-8.985	0.747
43.12	196.98	1.3858	-8.985	0.704
43.176	198.08	1.3247	-8.985	0.669
43.264	204.85	0.7962	-8.891	0.389
43.312	210.53	0.5433	-8.798	0.258
43.376	226.46	0.5595	-8.798	0.247
43.445	235.33	0.6183	-8.798	0.263
43.514	243.57	0.6738	-8.704	0.277
43.574	246.04	0.6932	-7.846	0.282
43.638	246.46	0.692	-7.846	0.281
43.704	246.46	0.693	-7.846	0.281
43.782	246.87	0.732	-7.019	0.297
43.838	253.55	0.783	-7.155	0.309
43.92	264.35	0.8876	-7.008	0.336
43.974	270.48	0.9046	-6.868	0.334
44.034	279.09	0.9809	-6.868	0.351
44.112	277.35	1.1455	-6.868	0.413
44.162	276.98	1.2217	-6.743	0.441
44.24	272.13	1.3168	-6.619	0.484
44.302	273.6	1.3528	-6.619	0.494
44.371	271.99	1.4594	-6.619	0.537
44.431	271.86	1.5767	-6.413	0.58
44.497	277.26	1.6773	-6.413	0.605
44.557	279.36	1.772	-6.314	0.634
44.624	283.48	1.837	-6.314	0.648
44.686	282.11	1.8816	-6.231	0.667
44.775	278.54	1.8832	-6.231	0.676
44.823	273.05	1.8845	-6.157	0.69
44.887	269.02	1.8625	-6.157	0.692
44.956	265.82	1.8066	-6.083	0.68
45.024	268.2	1.7549	-6.083	0.654
45.085	270.3	1.7346	-6.083	0.642
45.159	274.6	1.7233	-5.99	0.628
45.222	277.17	1.3472	-5.99	0.486
45.296	285.13	1.0103	-5.99	0.354
45.356	292.18	1.0766	-5.99	0.368
45.418	299.59	1.1103	-5.896	0.371
45.491	304.35	1.1687	-5.896	0.384
45.538	304.99	1.2256	-5.818	0.402
45.615	300.83	1.3073	-5.79	0.435
45.683	296.66	1.3385	-5.79	0.451
45.742	302.43	1.3744	-5.739	0.454
45.803	309.48	1.4285	-5.739	0.462
45.875	312.77	1.3854	-5.739	0.443
45.932	315.24	1.3961	-5.708	0.443
46.008	319.64	1.455	-5.708	0.455

46.063	322.29	1.4382	-5.68	0.446
46.151	314.6	1.4306	-5.651	0.455
46.206	302.8	1.3252	-5.128	0.438
46.276	285.95	0.8942	-5.128	0.313
46.335	271.67	0.6902	-5.128	0.254
46.402	256.66	0.6752	-5.335	0.263
46.465	230.21	0.6972	-4.424	0.303
46.531	196.98	0.6746	-4.424	0.342
46.599	187	0.6665	-4.048	0.356
46.655	169.34	0.5195	-4.048	0.307
46.736	150.67	0.2857	-4.048	0.19
46.802	132.91	0.1941	-3.557	0.146
46.858	120.64	0.1684	-3.369	0.14
46.921	102.52	0.1952	-3.182	0.19
47.002	89.7	0.2773	-3.182	0.309
47.052	78.17	0.2765	-3.088	0.354
47.128	68.65	0.2661	-2.995	0.388
47.182	66.82	0.2532	-2.995	0.379
47.261	60.23	0.2777	-2.808	0.461
47.313	52.91	0.2996	-2.34	0.566
47.382	52.07	0.3628	-2.34	0.697
47.448	43.11	0.4258	-2.34	0.988
47.53	40.09	0.4481	-1.778	1.118
47.582	38.99	0.5071	-1.684	1.3
47.667	37.62	0.7153	-1.778	1.901
47.712	36.98	0.7786	-1.872	2.105
47.775	36.43	0.8319	-2.527	2.283
47.842	35.79	0.9021	-3.088	2.521
47.914	36.43	0.9428	-3.65	2.588
47.98	35.33	1.0055	-3.931	2.846
48.04	36.43	1.0401	-4.586	2.855
48.101	36.71	1.1013	-5.147	3
48.172	36.98	1.1484	-5.615	3.105
48.253	36.61	1.1088	-5.896	3.028
48.319	38.35	1.05	-6.083	2.738
48.372	44.85	0.953	-5.896	2.125
48.425	56.93	0.8374	-5.803	1.471
48.497	86.5	0.7547	-5.896	0.873
48.56	99.5	0.7113	-5.99	0.715
48.629	108.38	0.6683	-5.99	0.617
48.692	109.2	0.6629	-5.99	0.607
48.773	111.21	0.6732	-6.083	0.605
48.823	112.31	0.6717	-6.083	0.598
48.902	113.96	0.683	-6.083	0.599
48.96	117.71	0.7071	-6.083	0.601
49.017	127.23	0.7324	-5.99	0.576
49.083	140.78	0.7437	-5.99	0.528

49.168	158.26	0.7569	-5.896	0.478
49.231	171.26	0.8142	-5.896	0.475
49.298	178.95	0.8502	-5.803	0.475
49.361	182.43	0.8881	-5.803	0.487
49.411	185.45	0.9076	-5.444	0.489
49.479	185.4	0.9076	-5.322	0.49
49.556	185.36	0.9068	-5.322	0.489
49.619	188.56	0.9196	-5.115	0.488
49.702	191.12	0.9391	-5.115	0.491
49.754	190.85	0.9997	-5.115	0.524
49.807	188.19	0	-4.867	0
49.888	188.38	0	-4.867	0
49.943	190.12	0	-4.867	0
50.012	193.78	0	-4.68	0
50.069	196.89	0	-4.68	0
50.133	174.92	0	-4.493	0

Depth (ft)	Tip Stress (tsf)	Sleeve Stre (tsf)	Pore Pressu (psi)	Ratio (%)
0	0	0.0201	0	0
0.077	2.84	0.0305	0	1.072
0.133	3.67	0.0382	0	1.043
0.207	5.32	0.0491	0.094	0.923
0.267	6.97	0.0552	0	0.792
0.353	9.81	0.0598	0	0.61
0.406	12.28	0.0647	0	0.527
0.463	15.21	0.0616	0	0.405
0.526	17.6	0.0588	0	0.334
0.594	21.9	0.0722	0	0.33
0.657	23.64	0.0837	0	0.354
0.743	27.4	0.1036	0	0.378
0.791	28.04	0.1211	0	0.432
0.86	29.14	0.1529	0	0.525
0.92	29.42	0.1635	0.094	0.556
0.989	30.79	0.1604	0.094	0.521
1.067	33.27	0.1342	0.094	0.404
1.121	36.47	0.1153	0.094	0.316
1.191	41.88	0.1287	0.094	0.307
1.25	48.02	0.155	0.094	0.323
1.324	57.37	0.2371	0.094	0.413
1.385	65.25	0.3232	0.094	0.495
1.45	73.13	0.3388	0.094	0.463
1.511	76.61	0.374	0.065	0.488
1.576	80.46	0.509	0.094	0.633
1.653	83.85	0.4849	0.051	0.578
1.71	86.24	0.3792	0.094	0.44
1.791	90.82	0.2387	0.094	0.263
1.843	96.04	0.2587	0.094	0.269
1.911	96.59	0.2847	0.094	0.295
1.975	97.6	0.3168	0.094	0.325
2.055	102	0.3721	0.094	0.365
2.106	101.63	0.3988	0.094	0.392
2.176	101.27	0.4155	0.094	0.41
2.235	104.57	0.4176	0.094	0.399
2.299	108.78	0.4298	0.094	0.395
2.366	111.99	0.4599	0.094	0.411
2.433	113.36	0.4909	0.094	0.433
2.504	114.74	0.4984	0.094	0.434
2.568	116.76	0.5022	0.094	0.43
2.643	117.95	0.5144	0.094	0.436
2.701	118.04	0.5227	0.094	0.443
2.756	119.23	0.5271	0.094	0.442
2.824	119.41	0.5368	0.094	0.45

2.893	120.24	0.5324	0.094	0.443
2.955	121.8	0.5286	0.094	0.434
3.021	123.35	0.5204	0	0.422
3.107	124.73	0.5217	0	0.418
3.158	124.45	0.5224	0	0.42
3.227	123.26	0.5224	0	0.424
3.285	122.35	0.5224	0	0.427
3.36	119.96	0.5171	0	0.431
3.419	118.13	0.5051	0	0.428
3.481	116.02	0.4898	0	0.422
3.548	112.72	0.4764	0	0.423
3.612	106.67	0.4536	0	0.425
3.681	101.45	0.4232	0	0.417
3.754	93.84	0.4037	-0.047	0.43
3.819	87.8	0.4023	-0.055	0.458
3.88	79.18	0.4056	-0.055	0.512
3.939	73.77	0.3979	-0.088	0.539
4.018	67.54	0.3934	-0.088	0.582
4.084	64.52	0.3979	-0.088	0.617
4.134	63.05	0.3925	-0.107	0.623
4.212	64.75	0.3084	-0.107	0.476
4.272	62.5	0.2418	-0.125	0.387
4.336	64.98	0.2672	-0.144	0.411
4.4	68.46	0.2983	-0.144	0.436
4.463	72.31	0.3235	-0.119	0.447
4.529	74.87	0.3293	-0.094	0.44
4.601	71.57	0.3454	-0.164	0.483
4.678	71.02	0.3511	-0.209	0.494
4.732	68.64	0.3534	-0.21	0.515
4.793	63.78	0.3596	-0.21	0.564
4.859	60.21	0.3643	-0.234	0.605
4.926	54.44	0.365	-0.246	0.67
5.001	50.31	0.3517	-0.257	0.699
5.075	46.56	0.315	-0.257	0.677
5.13	45.27	0.2942	-0.283	0.65
5.204	43.16	0.2687	-0.283	0.622
5.257	42.52	0.2469	-0.325	0.581
5.322	41.7	0.227	-0.325	0.544
5.39	40.23	0.2259	-0.325	0.562
5.452	39.04	0.2316	-0.375	0.593
5.515	37.21	0.2274	-0.375	0.611
5.584	35.74	0.2292	-0.398	0.641
5.645	33.91	0.2107	-0.398	0.621
5.715	31.89	0.2085	-0.398	0.654
5.784	31.25	0.2013	-0.408	0.644
5.854	32.44	0.2121	-0.408	0.654
5.93	37.39	0.2155	-0.418	0.576

5.984	43.16	0.2021	-0.423	0.468
6.042	48.94	0.2021	-0.428	0.413
6.115	58.93	0.2182	-0.402	0.37
6.172	62.23	0.2387	-0.402	0.384
6.255	63.69	0.2894	-0.375	0.454
6.305	64.24	0.3322	-0.468	0.517
6.368	64.61	0.4205	-0.375	0.651
6.44	64.88	0.4378	-0.468	0.675
6.525	66.17	0.4492	-0.375	0.679
6.576	70.11	0.4484	-0.468	0.64
6.64	74.6	0.4484	-0.468	0.601
6.712	77.71	0.3769	-0.468	0.485
6.785	84.04	0.3338	-0.281	0.397
6.83	86.97	0.3357	-0.281	0.386
6.893	91.92	0.3343	-0.281	0.364
6.978	97.05	0.3687	-0.281	0.38
7.026	96.04	0.3911	-0.265	0.407
7.093	86.05	0.4202	-0.265	0.488
7.159	87.89	0.4303	-0.265	0.49
7.25	85.87	0.4247	-0.226	0.495
7.309	83.58	0.4136	-0.226	0.495
7.379	79.91	0.3971	-0.187	0.497
7.418	76.34	0.3857	-0.187	0.505
7.495	69.01	0.3571	-0.187	0.517
7.565	63.14	0.3216	-0.187	0.509
7.619	56.64	0.3004	-0.281	0.53
7.689	50.5	0.2624	-0.281	0.52
7.743	44.81	0.2299	-0.281	0.513
7.83	37.57	0.1872	-0.281	0.498
7.89	32.35	0.1608	-0.281	0.497
7.961	27.95	0.1376	-0.281	0.492
8.006	25.29	0.1242	-0.281	0.491
8.1	20.34	0.1084	-0.281	0.533
8.146	18.79	0.1095	-0.281	0.583
8.227	16.77	0.107	-0.281	0.638
8.278	15.95	0.1082	-0.281	0.678
8.349	14.3	0.1163	-0.281	0.813
8.417	13.2	0.1201	-0.281	0.91
8.468	12.1	0.1209	-0.281	0.999
8.543	11.27	0.1222	-0.281	1.085
8.596	10.81	0.1206	-0.281	1.116
8.682	9.62	0.1243	-0.281	1.292
8.74	9.07	0.1201	-0.281	1.324
8.811	9.07	0.0858	-0.281	0.946
8.865	9.07	0.0599	-0.281	0.66
8.932	9.07	0.0496	-0.187	0.547
8.995	10.91	0.0546	-0.187	0.501

9.07	20.25	0.0672	-0.187	0.332
9.134	27.13	0.083	-0.281	0.306
9.188	28.96	0.1164	-0.468	0.402
9.265	28.32	0.1249	-0.468	0.441
9.346	26.76	0.1372	-0.468	0.513
9.392	27.58	0.1401	-0.468	0.508
9.477	32.44	0.1401	-0.468	0.432
9.538	35.65	0.1401	-0.375	0.393
9.581	36.38	0.1402	-0.375	0.385
9.659	36.84	0.1527	-0.375	0.415
9.716	36.84	0.1423	-0.375	0.386
9.803	35.47	0.1109	-0.375	0.313
9.852	33.63	0.1171	-0.375	0.348
9.931	29.33	0.1292	-0.375	0.44
9.985	27.58	0.1367	-0.375	0.496
10.044	27.45	0.1453	-0.422	0.529
10.112	27.45	0.1539	-0.422	0.561
10.187	27.31	0.1601	-0.422	0.586
10.249	27.95	0.161	-0.468	0.576
10.32	28.41	0.1584	-0.468	0.558
10.389	28.78	0.1487	-0.468	0.517
10.433	29.23	0.1461	-0.468	0.5
10.52	30.24	0.1487	-0.468	0.492
10.566	30.79	0.1522	-0.468	0.494
10.654	31.89	0.1709	-0.468	0.536
10.697	32.72	0.178	-0.468	0.544
10.764	35.74	0.1727	-0.468	0.483
10.837	38.49	0.1772	-0.468	0.46
10.894	40.05	0.1806	-0.375	0.451
10.969	39.87	0.1709	-0.468	0.429
11.032	38.67	0.1707	-0.468	0.441
11.102	37.48	0.1577	-0.468	0.421
11.16	36.29	0.1483	-0.468	0.409
11.241	35.1	0.1489	-0.468	0.424
11.287	35.01	0.1543	-0.375	0.441
11.379	35.01	0.1751	-0.468	0.5
11.42	35.65	0.1778	-0.468	0.499
11.508	38.12	0.239	-0.468	0.627
11.554	41.7	0.2662	-0.468	0.638
11.624	45.64	0.2533	-0.468	0.555
11.688	48.75	0.2665	-0.468	0.547
11.779	53.06	0.2938	-0.375	0.554
11.823	53.98	0.3343	-0.375	0.619
11.915	52.33	0.3704	-0.375	0.708
11.954	51.96	0.3698	-0.375	0.712
12.025	52.05	0.3716	-0.375	0.714
12.093	48.02	0.3859	-0.375	0.804

12.142	43.81	0.409	-0.375	0.934
12.231	35.01	0.4698	-0.375	1.342
12.274	31.43	0.5024	-0.281	1.598
12.362	23.55	0.491	-0.281	2.085
12.409	18.6	0.4187	-0.281	2.251
12.481	14.94	0.3507	-0.281	2.348
12.544	12.46	0.3758	-0.281	3.015
12.627	10.63	0.3651	-0.281	3.434
12.677	10.26	0.3223	-0.281	3.14
12.732	10.68	0.2369	0.359	2.219
12.802	9.99	0.1772	0.844	1.774
12.871	10.72	0.1385	0.937	1.292
12.935	11.27	0.1094	0.937	0.971
13.016	14.39	0.1081	1.031	0.751
13.073	20.8	0.1068	1.125	0.514
13.141	27.31	0.1233	1.031	0.451
13.205	29.51	0.1504	0.562	0.51
13.26	30.15	0.1769	0.094	0.587
13.344	30.61	0.236	0.094	0.771
13.386	31.07	0.2499	0	0.804
13.452	32.35	0.2617	-0.094	0.809
13.521	34.92	0.2693	-0.094	0.771
13.609	38.12	0.2862	-0.094	0.751
13.657	39.96	0.2922	-0.094	0.731
13.721	40.51	0.2896	-0.094	0.715
13.792	38.22	0.2719	-0.094	0.711
13.883	34.92	0.2506	-0.094	0.718
13.923	33.54	0.2352	-0.094	0.701
13.986	32.08	0.2101	-0.094	0.655
14.061	31.43	0.1958	-0.094	0.623
14.115	31.16	0.1915	-0.094	0.615
14.186	30.52	0.1902	-0.094	0.623
14.24	30.56	0.1902	-0.094	0.622
14.333	30.43	0.1921	-0.187	0.631
14.372	30.61	0.1939	-0.187	0.633
14.45	31.16	0.1922	-0.187	0.617
14.511	31.43	0.1934	-0.187	0.615
14.598	32.44	0.1962	-0.094	0.605
14.643	32.81	0.1979	-0.094	0.603
14.732	33.45	0.1942	-0.094	0.58
14.775	33.54	0.1882	-0.094	0.561
14.843	33.72	0.1845	-0.094	0.547
14.914	33.91	0.1711	-0.094	0.504
14.961	33.82	0.1545	-0.094	0.457
15.042	33.72	0.1301	-0.094	0.386
15.129	33.36	0.1301	-0.094	0.39
15.185	32.63	0.1301	-0.094	0.399

15.228	31.98	0.1418	-0.187	0.443
15.298	30.33	0.2053	-0.078	0.677
15.358	21.08	0.2545	0	1.207
15.43	23.09	0.2995	0	1.297
15.492	19.25	0.3225	0	1.676
15.57	15.95	0.3551	0	2.227
15.621	13.56	0.3678	0	2.712
15.716	11.46	0.3574	0	3.12
15.764	10.72	0.3454	0	3.221
15.83	10.26	0.312	0	3.039
15.881	9.99	0.2919	0	2.922
15.954	9.62	0.2576	0	2.677
16.032	9.44	0.2076	0	2.199
16.116	9.44	0.1805	0	1.912
16.152	9.44	0.1805	0	1.912
16.21	9.44	0.1811	0	1.919
16.293	9.35	0.179	0	1.915
16.344	9.35	0.1803	0	1.928
16.43	9.9	0.1819	0	1.838
16.479	10.63	0.1801	0	1.695
16.565	10.81	0.1801	0.094	1.666
16.612	11	0.1905	0.094	1.732
16.697	12.74	0.234	0.094	1.837
16.745	13.11	0.2491	0.094	1.901
16.814	13.65	0.2542	0.094	1.862
16.907	13.01	0.2604	-0.094	2.001
16.937	12.83	0.2682	-0.094	2.09
17.002	12.28	0.3001	-0.094	2.444
17.07	10.91	0.3238	-0.094	2.969
17.151	12.28	0.2932	0	2.387
17.194	10.63	0.2802	0	2.636
17.28	12.28	0.2813	0	2.291
17.333	13.75	0.2879	0	2.094
17.418	14.3	0.3158	0	2.209
17.47	13.29	0.3288	0	2.475
17.544	12.01	0.3363	0	2.801
17.597	11	0.3371	0	3.066
17.662	9.9	0.3362	0	3.397
17.73	9.07	0.3274	0	3.608
17.787	8.61	0.3202	0	3.717
17.866	8.61	0.3183	0	3.694
17.914	8.71	0.3183	0	3.655
18	8.71	0.3231	0	3.711
18.046	8.71	0.3223	0	3.701
18.138	8.8	0.3208	0	3.646
18.21	8.8	0.3229	0	3.67
18.269	8.71	0.3292	0	3.781

18.319	8.98	0.3323	0	3.7
18.38	8.61	0.3323	0.094	3.857
18.456	8.98	0.3323	0.094	3.7
18.505	8.89	0.3323	0.094	3.738
18.595	8.98	0.3229	0.094	3.595
18.64	8.98	0.3217	0.094	3.582
18.704	8.98	0.3301	0.094	3.675
18.77	9.16	0.3279	0.094	3.578
18.865	9.26	0.3429	0.094	3.704
18.907	9.35	0.3533	0.094	3.78
18.976	9.9	0.3607	0.094	3.644
19.043	10.36	0.3615	0.094	3.491
19.103	11	0.3708	0.094	3.372
19.179	11.64	0.4035	0.094	3.467
19.255	12.56	0.4371	0.187	3.481
19.307	12.65	0.4388	0.187	3.47
19.365	11.82	0.4347	0.187	3.677
19.444	11.55	0.4496	0.187	3.894
19.49	11.64	0.4678	0.094	4.019
19.579	12.37	0.5148	0.281	4.161
19.623	12.74	0.5227	0.281	4.103
19.709	14.2	0.4959	0	3.491
19.76	14.85	0.4768	0.094	3.212
19.839	16.68	0.4602	0.187	2.759
19.886	17.5	0.4658	0.187	2.661
19.962	19.8	0.4766	0.281	2.408
20.027	20.62	0.482	0.187	2.338
20.081	19.34	0.4864	0.187	2.515
20.166	16.22	0.485	0.187	2.99
20.225	14.2	0.4877	0.187	3.433
20.278	13.2	0.489	0.187	3.705
20.346	12.1	0.4845	0.187	4.005
20.422	11.27	0.4812	0.187	4.269
20.478	11	0.4726	0.187	4.297
20.54	11.09	0.4448	0.281	4.011
20.61	10.45	0.4191	0.281	4.011
20.701	10.45	0.386	0.281	3.695
20.744	10.45	0.3752	0.281	3.591
20.823	10.36	0.3632	0.281	3.507
20.889	10.45	0.3509	0.281	3.359
20.942	10.36	0.3451	0.281	3.333
21.013	10.45	0.3363	0.281	3.219
21.088	11	0.3363	0.281	3.058
21.156	11.55	0.3363	0.375	2.912
21.221	12.19	0.352	0.375	2.888
21.282	12.65	0.3862	0.375	3.053
21.332	12.37	0.4123	0.375	3.333

21.426	14.02	0.4494	0.375	3.205
21.466	14.2	0.4602	0.375	3.239
21.55	15.03	0.4821	0.468	3.208
21.598	15.76	0.4958	0.468	3.146
21.659	14.85	0.5082	0.468	3.423
21.733	14.94	0.5332	0.468	3.57
21.811	16.13	0.5543	0.468	3.436
21.869	17.5	0.5676	0.468	3.243
21.934	18.7	0.5783	0.468	3.093
22.009	20.16	0.5848	0.468	2.9
22.049	20.89	0.5884	0.468	2.816
22.117	20.99	0.608	0.281	2.897
22.186	19.8	0.6225	-0.375	3.145
22.247	17.23	0.6216	-0.468	3.608
22.316	14.2	0.5901	-0.375	4.154
22.396	12.28	0.5435	-0.468	4.426
22.458	11.09	0.5163	-0.375	4.656
22.51	10.26	0.4884	-0.375	4.758
22.585	9.71	0.416	-0.375	4.282
22.66	9.35	0.3628	-0.375	3.881
22.723	9.71	0.3492	-0.375	3.594
22.774	9.16	0.3495	-0.375	3.814
22.854	9.71	0.3628	-0.375	3.735
22.924	10.81	0.3655	-0.375	3.38
22.99	11.27	0.3598	-0.375	3.192
23.036	11.36	0.3521	-0.281	3.098
23.114	10.72	0.3596	-0.375	3.353
23.171	9.71	0.3761	-0.281	3.872
23.229	9.35	0.3873	-0.375	4.143
23.309	9.35	0.3972	-0.281	4.249
23.385	9.35	0.4111	-0.281	4.398
23.443	9.35	0.4363	-0.281	4.667
23.503	9.9	0.4766	-0.281	4.815
23.572	10.91	0.5077	-0.281	4.655
23.624	11.82	0.5024	-0.281	4.25
23.691	13.56	0.4891	-0.281	3.606
23.78	18.05	0.4661	-0.281	2.582
23.843	22.82	0.4257	-0.281	1.865
23.927	30.79	0.376	-0.281	1.221
23.968	34.92	0.3058	-0.281	0.876
24.024	39.04	0.2104	-0.281	0.539
24.114	41.61	0.1698	-0.281	0.408
24.156	42.25	0.1538	-0.281	0.364
24.228	43.26	0.1445	-0.281	0.334
24.292	43.62	0.1603	-0.141	0.368
24.364	41.51	0.1791	-0.094	0.431
24.431	40.51	0.1932	0	0.477

24.475	38.49	0.2039	0	0.53
24.543	36.47	0.2475	0	0.679
24.61	31.34	0.3067	0	0.979
24.676	25.84	0.3741	0	1.448
24.747	20.34	0.4645	0	2.283
24.83	15.85	0.5403	0	3.408
24.877	14.48	0.5492	0	3.793
24.948	13.11	0.5259	0	4.013
25.013	11.73	0.4912	0	4.187
25.071	10.17	0.4502	0	4.426
25.147	8.8	0.4098	0	4.658
25.208	8.25	0.3796	0.094	4.603
25.268	8.25	0.3476	0.094	4.215
25.346	8.34	0.3053	0.094	3.661
25.414	8.98	0.2854	0.094	3.177
25.463	9.16	0.2826	0.094	3.083
25.527	8.98	0.2843	0.094	3.165
25.599	8.89	0.2942	0.094	3.31
25.685	8.71	0.2833	0.094	3.254
25.737	8.52	0.2727	0.094	3.2
25.803	8.61	0.2608	0.094	3.027
25.88	8.61	0.2376	0.094	2.758
25.949	8.34	0.2058	0.094	2.468
25.997	8.25	0.1744	0.187	2.115
26.066	8.16	0.1711	0.281	2.098
26.136	8.16	0.2089	0.375	2.561
26.189	8.16	0.2105	0.375	2.581
26.262	8.16	0.1983	0.375	2.431
26.313	8.25	0.2339	0.468	2.835
26.38	9.26	0.2846	0.468	3.075
26.469	13.47	0.3843	0.656	2.852
26.511	17.5	0.4044	0.656	2.311
26.598	22.91	0.4123	0.75	1.8
26.644	25.84	0.4169	0.562	1.613
26.722	29.14	0.4511	-1.312	1.548
26.783	29.88	0.4889	-1.968	1.636
26.841	29.51	0.5119	-2.155	1.735
26.911	28.41	0.5304	-2.155	1.867
26.975	24.65	0.5539	-2.155	2.247
27.046	22.27	0.5931	-2.155	2.663
27.104	18.79	0.6567	-2.343	3.496
27.181	15.49	0.7605	-2.343	4.91
27.253	14.66	0.8259	-2.343	5.633
27.319	16.04	0.8218	-2.343	5.124
27.406	20.16	0.77	-2.343	3.819
27.432	23.37	0.7514	-2.343	3.215
27.496	28.78	0.705	-2.436	2.45

27.582	37.94	0.5843	-2.811	1.54
27.634	43.81	0.4992	-3.092	1.139
27.691	46.19	0.4164	-4.123	0.901
27.765	46.28	0.3368	-4.591	0.728
27.856	45.27	0.3051	-4.873	0.674
27.889	44.36	0.3126	-4.873	0.705
27.971	41.7	0.383	-4.873	0.919
28.035	39.87	0.4112	-4.873	1.032
28.117	39.41	0.4068	-4.873	1.032
28.151	39.41	0.3984	-4.779	1.011
28.234	38.58	0.3718	-4.873	0.964
28.301	38.86	0.3574	-4.873	0.92
28.347	40.23	0.3564	-4.967	0.886
28.44	41.42	0.3215	-4.967	0.776
28.485	41.88	0.2861	-4.967	0.683
28.577	41.06	0.2738	-4.967	0.667
28.617	40.05	0.2608	-4.967	0.651
28.705	38.03	0.3579	-4.967	0.941
28.755	38.03	0.4557	-4.967	1.198
28.844	38.03	0.5198	-4.967	1.367
28.886	38.95	0.5234	-4.967	1.344
28.943	36.84	0.4988	-5.326	1.354
29.006	49.12	0.4237	-5.326	0.863
29.093	67.36	0.3412	-5.326	0.506
29.137	73.22	0.3218	-4.873	0.439
29.204	72.86	0.3083	-5.622	0.423
29.276	66.08	0.2869	-6.559	0.434
29.341	61.77	0.2447	-6.559	0.396
29.408	57.28	0.2457	-6.559	0.429
29.463	51.69	0.2374	-6.559	0.459
29.538	47.75	0.2554	-6.465	0.535
29.632	46.1	0.2945	-6.465	0.639
29.682	46.28	0.3309	-6.465	0.715
29.754	47.38	0.3675	-6.465	0.776
29.813	48.75	0.371	-6.465	0.761
29.86	50.04	0.374	-6.465	0.747
29.945	51.87	0.3665	-6.465	0.707
29.991	54.53	0.3384	-6.653	0.621
30.085	55.99	0.2554	-6.747	0.456
30.124	54.62	0.2238	-6.747	0.41
30.219	49.85	0.1962	-6.559	0.393
30.262	47.56	0.1962	-6.559	0.412
30.355	41.15	0.2727	-6.559	0.663
30.384	39.77	0.2961	-6.653	0.744
30.449	34.18	0.3467	-6.747	1.014
30.518	30.33	0.3987	-6.747	1.314
30.599	26.3	0.484	-6.747	1.84

30.663	24.47	0.5721	-6.559	2.338
30.71	25.89	0.5976	-6.653	2.308
30.799	25.48	0.6045	-6.653	2.373
30.846	25.57	0.6038	-6.653	2.361
30.933	26.21	0.5813	-6.606	2.218
30.985	28.32	0.5607	-6.653	1.98
31.04	30.88	0.2335	-6.559	0.756
31.114	32.53	0.213	-6.559	0.655
31.191	32.35	0.193	-6.747	0.596
31.239	31.53	0.1957	-6.653	0.621
31.34	29.88	0.2434	-6.622	0.815
31.373	27.58	0.2664	-6.622	0.966
31.443	27.68	0.3165	-6.622	1.144
31.518	26.85	0.3741	-6.559	1.393
31.563	26.21	0.4096	-6.559	1.563
31.629	25.11	0.4561	-6.559	1.816
31.712	24.29	0.5031	-6.559	2.072
31.775	23.83	0.5194	-6.747	2.18
31.832	23.46	0.5224	-6.747	2.227
31.918	23	0.5133	-6.747	2.232
31.998	23.64	0.4949	-6.747	2.093
32.041	24.01	0.477	-6.653	1.987
32.105	24.56	0.4372	-6.653	1.78
32.154	24.74	0.4034	-6.653	1.63
32.228	24.19	0.3335	-6.747	1.378
32.285	22.82	0.2774	-6.559	1.216
32.37	19.7	0.2417	-6.559	1.227
32.421	17.14	0.2412	-6.559	1.407
32.499	14.85	0.2408	-6.559	1.622
32.548	13.47	0.2402	-6.559	1.783
32.614	11.82	0.3035	-6.559	2.568
32.682	12.83	0.3259	-6.559	2.54
32.774	16.77	0.3484	-6.465	2.078
32.82	18.97	0.3623	-6.559	1.91
32.906	23.55	0.361	-6.653	1.533
32.955	26.21	0.3271	-6.559	1.248
33.007	28.41	0.2804	-6.559	0.987
33.089	29.88	0.1967	-6.559	0.658
33.173	31.16	0.2277	-6.559	0.731
33.206	31.43	0.2335	-6.559	0.743
33.271	31.53	0.2106	-6.559	0.668
33.355	31.53	0.2896	-6.653	0.919
33.403	31.53	0.3605	-6.59	1.143
33.472	31.98	0.4578	-6.59	1.431
33.542	33.36	0.5542	-6.59	1.661
33.61	34.46	0.6454	-6.559	1.873
33.683	35.01	0.6823	-6.528	1.949

33.745	34	0.7109	-6.544	2.091
33.81	30.79	0.6828	-6.465	2.217
33.9	25.11	0.6319	-6.559	2.516
33.96	20.62	0.5604	-6.372	2.718
33.996	19.7	0.5198	-6.372	2.638
34.083	16.04	0.4582	-6.372	2.857
34.122	14.85	0.4492	-6.372	3.025
34.19	13.29	0.4649	-6.278	3.499
34.262	13.11	0.4626	-6.278	3.53
34.32	13.93	0.4734	-6.278	3.399
34.398	15.58	0.4853	-6.278	3.115
34.473	18.6	0.4991	-6.278	2.683
34.531	25.02	0.4783	-6.184	1.912
34.622	42.52	0.4351	-6.184	1.023
34.664	50.95	0.4142	-6.184	0.813
34.736	60.76	0.3717	-6.184	0.612
34.807	64.06	0.3852	-6.184	0.601
34.843	64.7	0.3751	-6.184	0.58
34.921	62.68	0.3554	-6.278	0.567
34.982	60.21	0.3961	-6.278	0.658
35.069	54.16	0.4692	-6.278	0.866
35.117	50.04	0.515	-6.372	1.029
35.171	45.82	0.5783	-6.278	1.262
35.25	41.24	0.6346	-6.372	1.539
35.339	36.02	0.6662	-6.278	1.85
35.387	34.55	0.7263	-6.184	2.102
35.467	34.37	0.8115	-6.184	2.361
35.499	34.64	0.8251	-6.184	2.382
35.582	32.72	0.79	-6.2	2.415
35.664	33.45	0.7888	-6.2	2.358
35.708	33.27	0.7771	-6.2	2.336
35.783	32.9	0.7239	-6.278	2.2
35.846	32.53	0.6637	-6.145	2.04
35.895	31.34	0.6517	-6.184	2.079
35.964	28.78	0.6679	-6.091	2.321
36.028	25.39	0.6922	-6.091	2.727
36.116	21.72	0.6936	-6.091	3.193
36.163	19.15	0.6938	-6.091	3.623
36.23	17.05	0.698	-6.091	4.095
36.299	15.49	0.7071	-6.091	4.565
36.383	17.05	0.7386	-6.091	4.333
36.418	15.4	0.7553	-6.091	4.906
36.499	17.05	0.7818	-6.091	4.587
36.559	19.89	0.7586	-6.091	3.815
36.646	25.48	0.6665	-5.997	2.616
36.699	28.68	0.6199	-5.997	2.161
36.753	34	0.5954	-5.997	1.751

36.811	36.38	0.5817	-5.997	1.599
36.879	38.49	0.5747	-6.091	1.493
36.968	38.4	0.5458	-5.903	1.421
37.026	37.67	0.5552	-5.903	1.474
37.092	38.03	0.6393	-5.903	1.681
37.149	39.13	0.7082	-6.091	1.81
37.208	41.61	0.7329	-6.091	1.762
37.283	42.25	0.7566	-5.997	1.791
37.344	43.07	0.7571	-5.997	1.758
37.414	43.9	0.7605	-5.997	1.732
37.484	44.81	0.7791	-5.997	1.739
37.534	45.18	0.7837	-5.997	1.735
37.614	46.74	0.7639	-6.091	1.634
37.678	49.49	0.7339	-6.091	1.483
37.761	53.52	0.6954	-6.184	1.299
37.8	57.55	0.565	-6.372	0.982
37.864	63.42	0.3064	-6.372	0.483
37.946	69.01	0.2788	-6.841	0.404
38.001	70.66	0.2664	-7.215	0.377
38.076	70.57	0.3112	-7.215	0.441
38.135	70.75	0.3904	-7.208	0.552
38.192	71.16	0.5111	-7.208	0.718
38.264	68.73	0.7885	-7.2	1.147
38.338	71.57	1.0823	-7.309	1.512
38.401	75.61	1.092	-7.309	1.444
38.492	85.41	0.972	-7.309	1.138
38.534	91.83	0.9122	-7.309	0.993
38.585	102.64	0.8443	-7.403	0.823
38.68	121.7	0.8084	-7.871	0.664
38.721	124.45	0.8072	-7.965	0.649
38.791	123.54	0.7497	-7.965	0.607
38.85	119.23	0.6402	-7.965	0.537
38.936	109.97	0.6057	-7.965	0.551
38.987	101.91	0.5971	-7.965	0.586
39.053	92.93	0.5684	-7.965	0.612
39.118	85.78	0.5298	-7.965	0.618
39.205	75.15	0.4639	-7.965	0.617
39.252	69.47	0.4287	-7.965	0.617
39.313	64.06	0.3904	-7.965	0.609
39.377	59.84	0.3646	-7.965	0.609
39.457	54.99	0.339	-7.965	0.617
39.522	51.69	0.3133	-7.965	0.606
39.597	47.75	0.2807	-7.965	0.588
39.657	46.74	0.281	-7.965	0.601
39.7	45.55	0.2794	-7.965	0.613
39.768	44.72	0.2664	-7.871	0.596
39.837	45.5	0.3027	-7.871	0.665

39.918	43.71	0.3765	-7.871	0.861
39.991	45.46	0.4238	-7.871	0.932
40.029	46.1	0.4473	-7.871	0.97
40.097	50.68	0.4639	-7.871	0.915
40.184	61.31	0.4546	-7.871	0.741
40.24	72.58	0.4161	-7.871	0.573
40.297	85.05	0.333	-7.871	0.392
40.379	100.9	0.2461	-7.871	0.244
40.425	106.77	0.2537	-7.871	0.238
40.5	109.97	0.2768	-7.871	0.252
40.554	102.28	0.3387	-7.871	0.331
40.623	69.19	0.4336	-7.84	0.627
40.695	67.18	0.4795	-7.84	0.714
40.749	59.57	0.5134	-7.84	0.862
40.833	48.39	0.6074	-7.777	1.255
40.881	43.71	0.7006	-7.777	1.603
40.965	30.88	0.8388	-7.777	2.716
41.018	24.19	0.8792	-7.777	3.634
41.104	19.06	0.7931	-7.777	4.161
41.152	18.05	0.7564	-7.777	4.19
41.232	18.42	0.7498	-7.684	4.071
41.285	19.34	0.7779	-7.59	4.023
41.376	29.69	0.8161	-7.59	2.748
41.419	41.7	0.8278	-7.403	1.985
41.47	70.66	0.8413	-7.403	1.191
41.554	117.12	0.8773	-7.403	0.749
41.616	138.48	0.8951	-7.403	0.646
41.681	148.19	0.8829	-7.403	0.596
41.733	159.28	0.8849	-7.403	0.556
41.804	179.26	0.9542	-7.309	0.532
41.873	195.29	1.0276	-7.309	0.526
41.93	192.09	1.0844	-7.293	0.565
41.996	219.21	1.1576	-7.291	0.528
42.07	227.83	1.1951	-7.291	0.525
42.136	228.2	1.2377	-7.253	0.542
42.198	225.08	1.2357	-7.231	0.549
42.259	222.42	1.2221	-7.209	0.549
42.334	216.1	1.1745	-7.209	0.544
42.399	211.24	1.114	-7.209	0.527
42.47	201.8	1.0393	-7.122	0.515
42.523	196.85	0.9679	-7.122	0.492
42.595	190.07	0.8757	-7.122	0.461
42.671	186.59	0.8523	-7.122	0.457
42.717	183.29	0.8241	-7.122	0.45
42.786	172.02	0.7447	-7.122	0.433
42.861	162.58	0.7194	-7.075	0.442
42.931	148.46	0.6126	-7.075	0.413

42.983	143.7	0.4849	-7.075	0.337
43.049	132.06	0.4152	-7.122	0.314
43.121	118.5	0.3682	-6.934	0.311
43.188	107.22	0.4254	-6.934	0.397
43.242	97.33	0.4172	-6.934	0.429
43.317	76.06	0.4717	-6.934	0.62
43.378	62.41	0.5221	-6.934	0.837
43.467	42.98	0.5297	-6.981	1.232
43.51	35.28	0.5022	-6.934	1.423
43.58	24.47	0.4429	-7.122	1.81
43.642	21.08	0.3916	-6.934	1.858
43.701	16.77	0.3558	-6.934	2.122
43.781	14.85	0.3033	-6.841	2.043
43.834	13.93	0.2383	-6.841	1.711
43.907	13.29	0.188	-6.841	1.414
43.971	12.65	0.1585	-6.841	1.253
44.045	12.19	0.1589	-6.841	1.304
44.137	10.72	0.1581	-6.653	1.475
44.166	10.17	0.169	-6.841	1.662
44.227	9.53	0.1848	-6.559	1.939
44.317	8.89	0.1563	-6.559	1.758
44.362	8.52	0.1315	-6.653	1.543
44.423	8.52	0.1101	-6.465	1.292
44.495	8.52	0.1101	-6.465	1.292
44.559	8.98	0.1115	-6.278	1.242
44.626	8.8	0.1262	-6.278	1.435
44.709	8.75	0.1858	-6.278	2.123
44.764	8.75	0.2217	-6.278	2.533
44.839	8.71	0.2462	-6.278	2.828
44.889	10.63	0.2508	-6.278	2.359
44.953	12.74	0.2531	-6.184	1.987
45.024	14.39	0.2791	-6.184	1.94
45.083	15.49	0.295	-6.184	1.905
45.159	17.6	0.3074	-6.184	1.747
45.215	20.07	0.3266	-6.184	1.627
45.305	22.64	0.4295	-6.184	1.897
45.35	22.91	0.4114	-6.184	1.795
45.414	16.13	0.3634	-6.161	2.253
45.483	18.33	0.3563	-6.138	1.944
45.551	16.59	0.3563	-6.138	2.148
45.619	15.85	0.3563	-6.091	2.247
45.672	19.8	0.3501	-6.091	1.769
45.747	31.89	0.3006	-5.997	0.943
45.816	46.1	0.277	-5.997	0.601
45.889	49.76	0.2858	-5.903	0.574
45.933	49.95	0.2543	-5.81	0.509
46.015	46.83	0.3439	-5.716	0.734

46.069	41.33	0.3898	-5.716	0.943
46.157	31.8	0.3811	-5.716	1.199
46.201	27.58	0.361	-5.716	1.309
46.286	22.09	0.3291	-5.622	1.49
46.333	20.07	0.3195	-5.529	1.592
46.414	20.07	0.3062	-5.529	1.526
46.471	20.07	0.3056	-5.435	1.523
46.535	20.07	0.2812	-5.341	1.401
46.605	22.09	0.3255	-5.341	1.474
46.693	22.09	0.3249	-5.341	1.471
46.722	21.35	0.3066	-5.341	1.436
46.789	18.79	0.2921	-5.248	1.555
46.885	15.4	0.3041	-5.248	1.975
46.96	13.56	0.3579	-5.154	2.639
47.005	13.01	0.3487	-5.154	2.679
47.058	12.56	0.3295	-5.154	2.624
47.128	12.56	0.2974	-5.06	2.368
47.191	13.2	0.2612	-4.919	1.98
47.244	13.2	0.2335	-4.919	1.77
47.319	14.57	0.2254	-4.919	1.547
47.389	13.2	0.2279	-4.685	1.727
47.452	12.19	0.2271	-4.685	1.864
47.543	13.24	0.2338	-4.685	1.765
47.592	12.37	0.2258	-4.685	1.825
47.684	13.29	0.2068	-4.591	1.556
47.724	13.75	0.201	-4.591	1.462
47.774	13.56	0.1942	-4.591	1.432
47.861	12.56	0.1823	-4.591	1.452
47.906	11.64	0.1716	-4.591	1.475
47.973	11.36	0.1701	-4.591	1.497
48.04	11.09	0.1774	-4.591	1.6
48.126	11.09	0.1673	-4.498	1.508
48.165	11.09	0.1587	-4.498	1.431
48.251	11.09	0.1408	-4.498	1.27
48.316	11.27	0.1401	-4.498	1.243
48.368	11.36	0.1436	-4.404	1.264
48.44	11.55	0.1534	-4.404	1.328
48.53	11.55	0.1561	-4.404	1.352
48.577	11.73	0.1582	-4.404	1.349
48.627	11.73	0.1601	-4.404	1.365
48.713	11.82	0.1601	-4.404	1.354
48.759	11.82	0.1601	-4.404	1.354
48.824	11.82	0.1587	-4.404	1.342
48.896	11.82	0.1546	-4.404	1.308
48.962	11.73	0.1529	-4.31	1.304
49.026	11.73	0.1533	-4.31	1.307
49.109	11.91	0.1521	-4.31	1.277

49.153	12.01	0.1394	-4.31	1.161
49.222	12.01	0.0965	-4.31	0.804
49.293	12.01	0.1243	-4.217	1.036
49.35	12.01	0.1437	-4.217	1.197
49.426	12.19	0.1669	-4.217	1.37
49.494	12.74	0.1786	-4.123	1.402
49.56	14.66	0.1985	-4.123	1.354
49.608	15.4	0.2127	-4.123	1.381
49.676	14.57	0.2226	-4.029	1.528
49.752	13.56	0.2164	-4.029	1.595
49.812	13.2	0	-3.936	0
49.88	12.74	0	-3.936	0
49.947	12.28	0	-3.936	0
50.019	12.37	0	-3.936	0
50.069	12.37	0	-3.936	0
50.135	12.56	0	-3.936	0

Appendix B
Laboratory Tests

TABLE I
MAXIMUM DENSITY TESTS

Sample	Classification	Optimum Moisture (%)	Maximum Dry Density (lbs/cu.ft)
B-3 @ 2'	Silty SAND	9.0	124.0

TABLE II
EXPANSION TESTS

Sample	Classification	Expansion Index
B-3 @ 2'	Silty SAND	3

TABLE III
ATTERBERG LIMITS

Sample	Liquid Limit	Plastic Limit	Plasticity Index
B-3 @ 15'	25	17	8
B-3 @ 20'	33	18	15

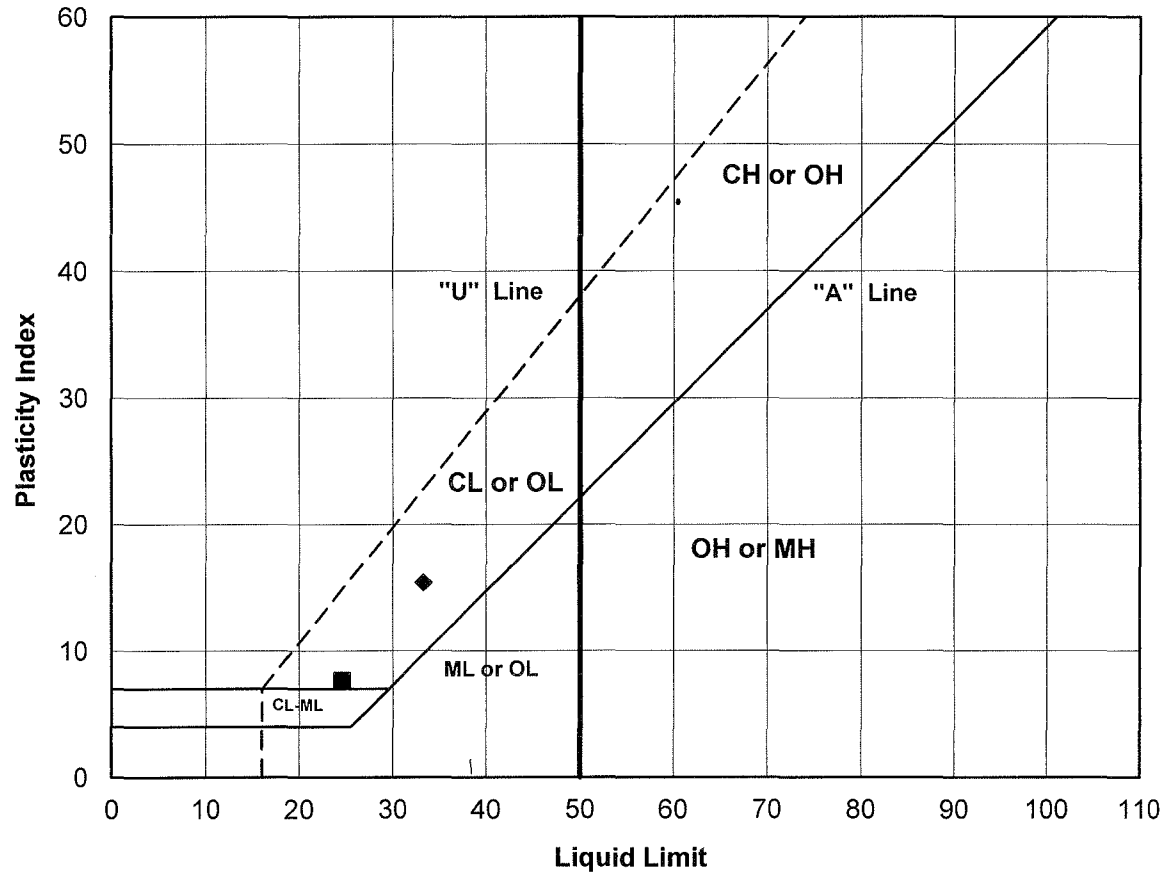
TABLE IV
CORROSION TESTS

Sample	pH	Electrical Resistivity	Sulfate (%)	Chloride (ppm)
B-3 @ 2'	7.2	26,722	0.004	303

% by weight
ppm – mg/kg

PLASTICITY INDEX

ASTM D4318



Symbol	Sample	Depth	LL	PL	PI	USCS	Soil Description
■	B3	15'	25	17	8	CL	Lean Clay
◆	B3	20'	33	18	15	CL	Lean Clay
▲							
□							
◇							
△							

NorCal Engineering

SOILS AND GEOTECHNICAL CONSULTANTS

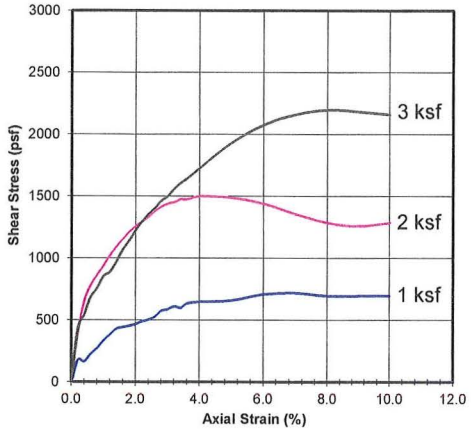
Amir Development Company

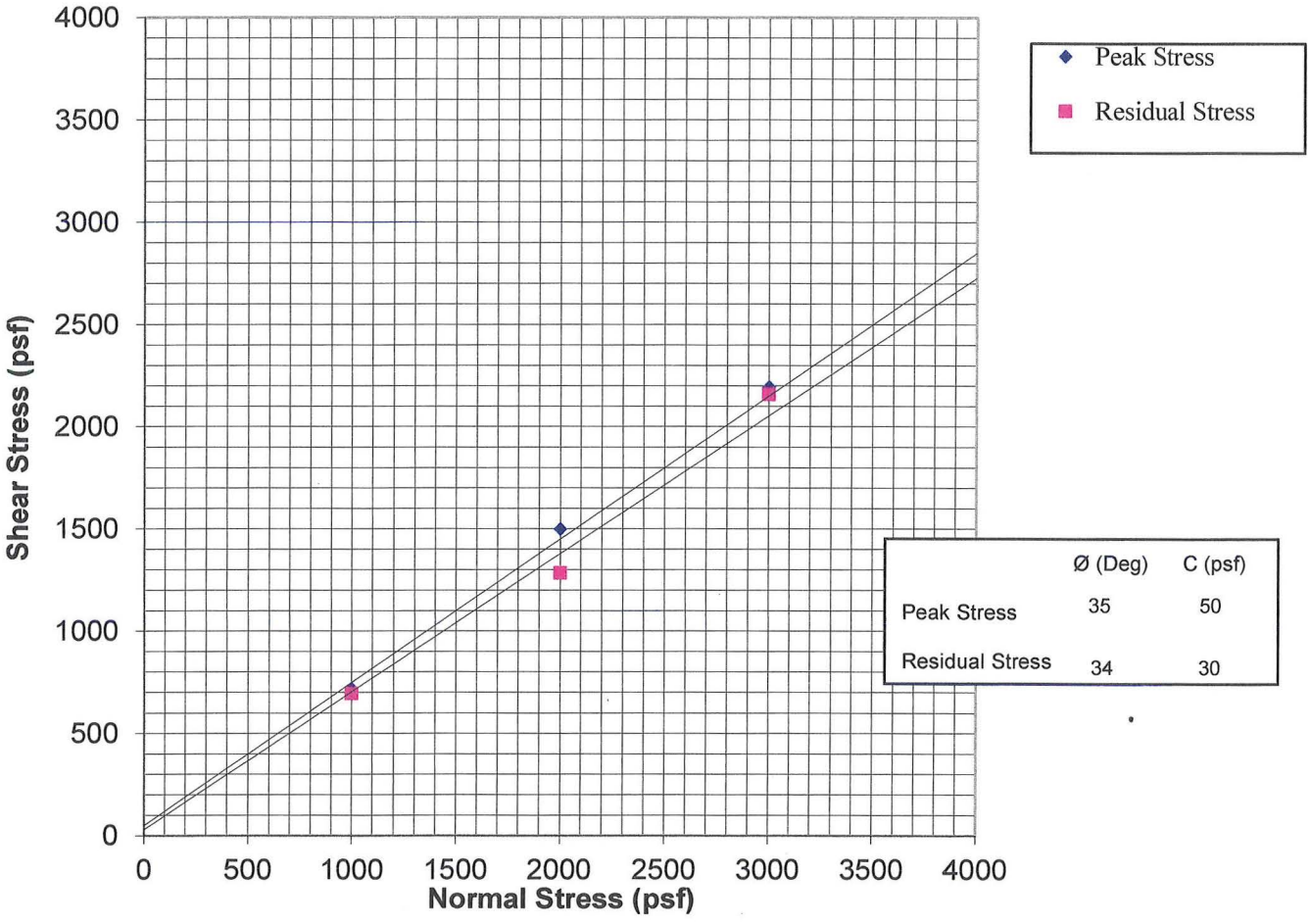
PROJECT NUMBER: 21889-20 DATE: 7/10/2020

PLASTICITY INDEX

ASTM D4318

Sample No.		T2@2'		
Sample Type:		Undisturbed-Saturated		
Soil Description:		Silty Fine-Medium Grained Sand w/ Some Small Gravel		
		1	2	3
Normal Stress	(psf)	1000	2000	3000
Peak Stress	(psf)	720	1500	2196
Displacement	(in.)	0.175	0.100	0.200
Residual Stress	(psf)	696	1284	2160
Displacement	(in.)	0.250	0.250	0.250
Initial Dry Density	(pcf)	100.9	100.9	100.9
Initial Water Content	(%)	7.5	7.5	7.5
Strain Rate	(in./min.)	0.020	0.020	0.020





NorCal Engineering

SOILS AND GEOTECHNICAL CONSULTANTS

Amir Development Company

PROJECT NUMBER: 21889-20 DATE: 7/14/2020

DIRECT SHEAR TEST

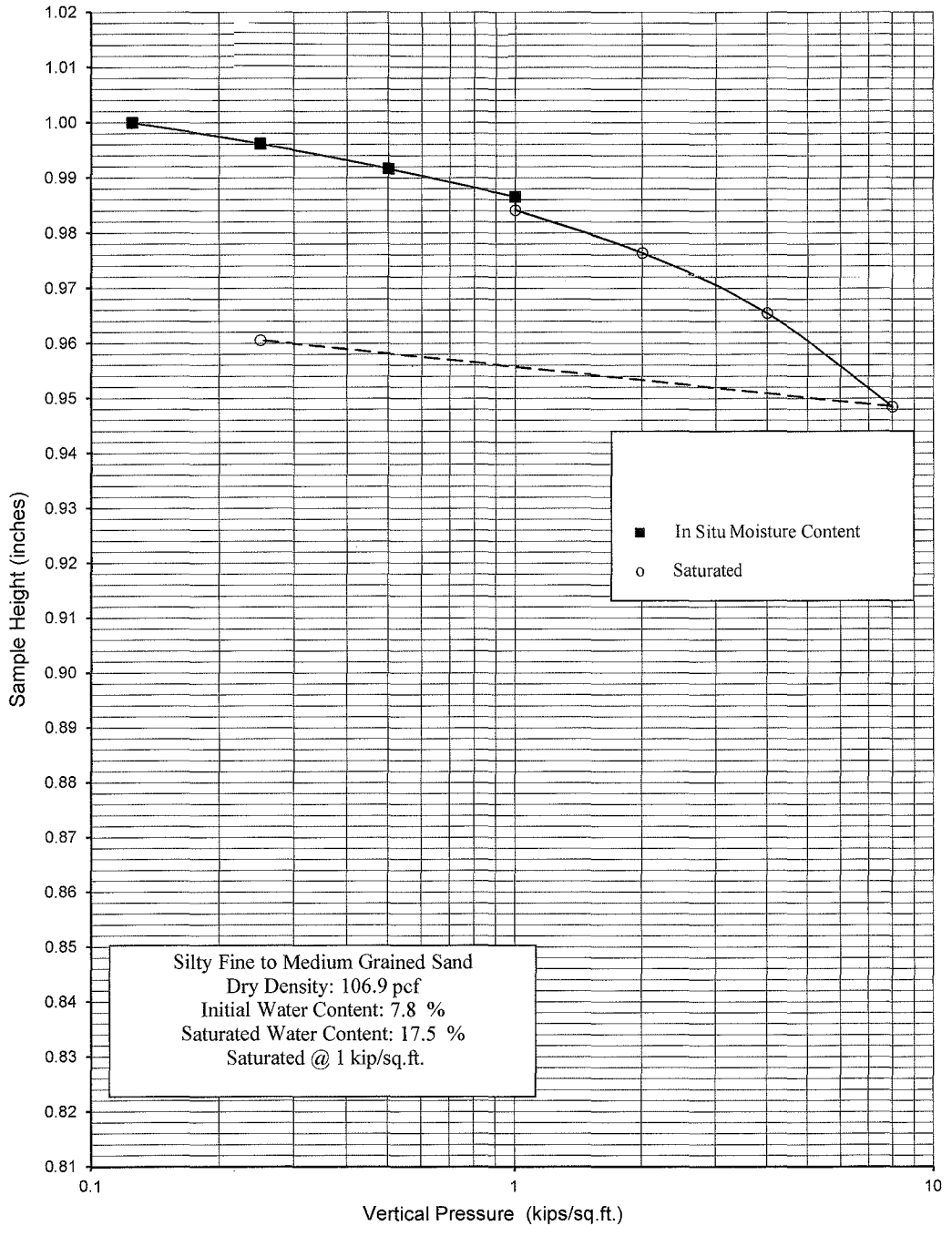
ASTM D3080

Plate A

Vertical Pressure (kips/sq.ft.)	Sample Height (inches)	Consolidation (percent)	Sample No. T2	Depth 5'	Date 7/14/2020
0.125	1.0000	0.0			
0.25	0.9962	0.4			
0.5	0.9917	0.8			
1	0.9866	1.3			
1	0.9842	1.6			
2	0.9764	2.4			
4	0.9655	3.5			
8	0.9485	5.2			
0.25	0.9606	3.9			

Saturated

Date Tested: 7/10/2020
Sample: T2
Depth: 5'



NorCal Engineering

SOILS AND GEOTECHNICAL CONSULTANTS

Amir Development Company

PROJECT NUMBER: 21889-20 DATE: 7/14/2020

CONSOLIDATION TEST

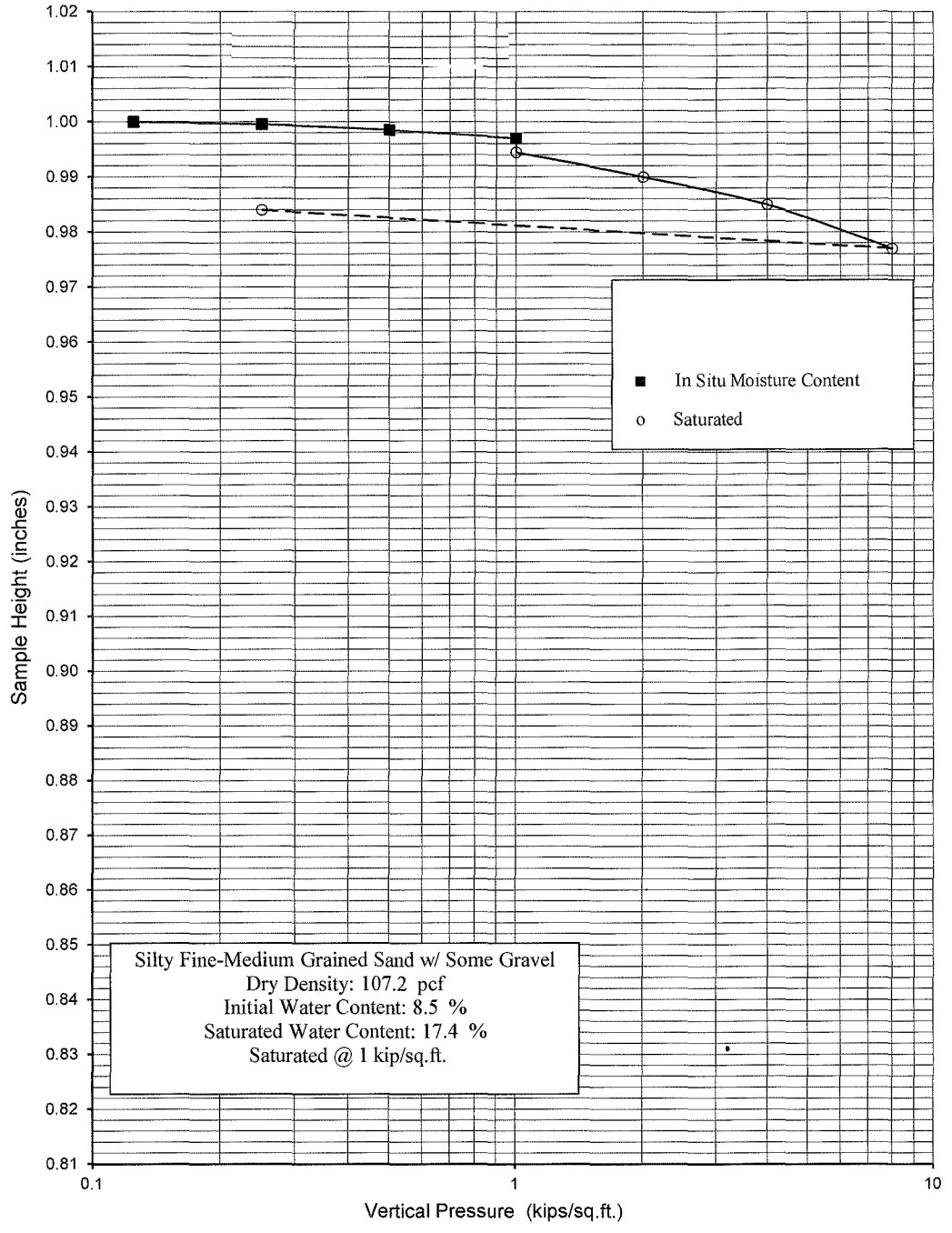
ASTM D2435

Plate B

Vertical Pressure (kips/sq.ft.)	Sample Height (inches)	Consolidation (percent)	Sample No. T2	Depth 10'	Date 7/14/2020
0.125	1.0000	0.0			
0.25	0.9995	0.0			
0.5	0.9985	0.2			
1	0.9970	0.3			
1	0.9945	0.6			
2	0.9900	1.0			
4	0.9850	1.5			
8	0.9770	2.3			
0.25	0.9840	1.6			

Saturated

Date Tested: 7/10/2020
Sample: T2
Depth: 10'



NorCal Engineering

SOILS AND GEOTECHNICAL CONSULTANTS

Amir Development Company

PROJECT NUMBER: 21889-20 DATE: 7/14/2020

CONSOLIDATION TEST

ASTM D2435

Plate C

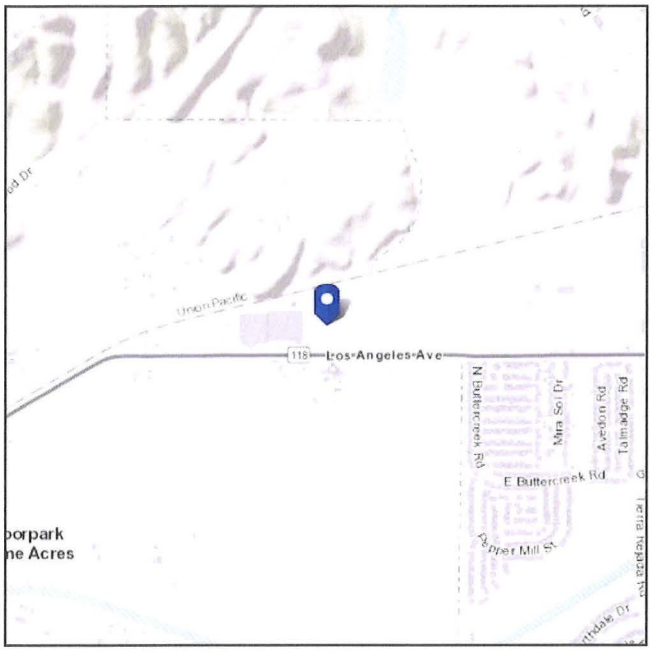
Appendix C
Liquefaction Analysis

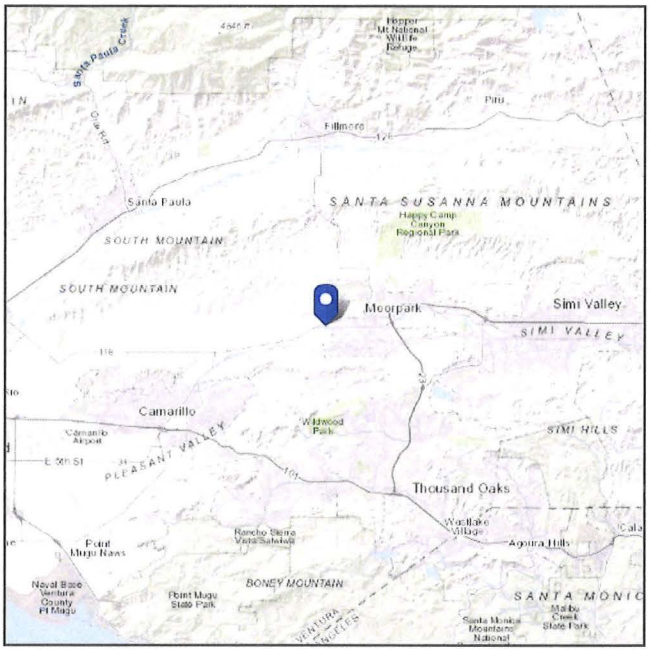
ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-22
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 451.22 ft (NAVD 88)
Latitude: 34.279805
Longitude: -118.912343





ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

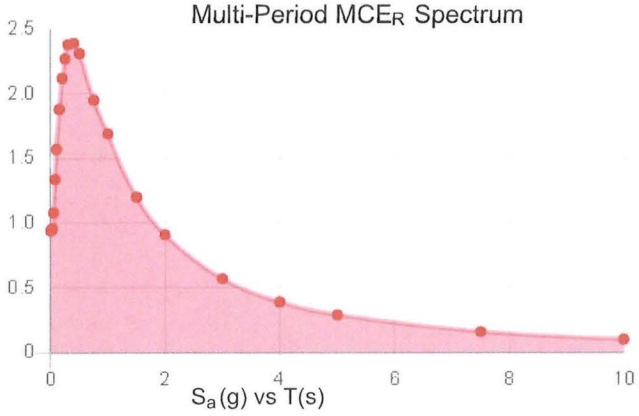
Seismic

Site Soil Class:

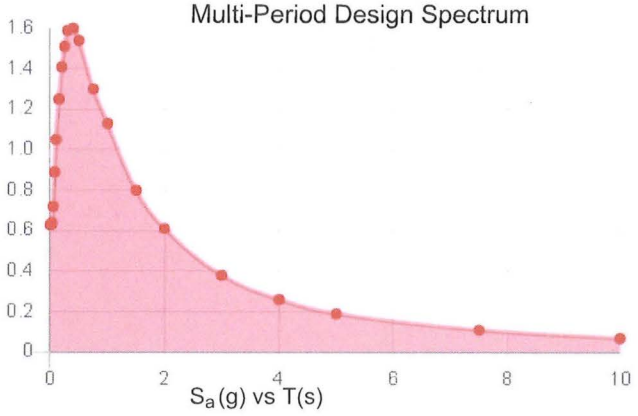
Results:

PGA_M :	0.83	T_L :	8
S_{MS} :	2.15	S_S :	2.1
S_{M1} :	1.69	S_1 :	0.77
S_{DS} :	1.44	S_{DC} :	
S_{D1} :	1.13	V_{S30} :	260

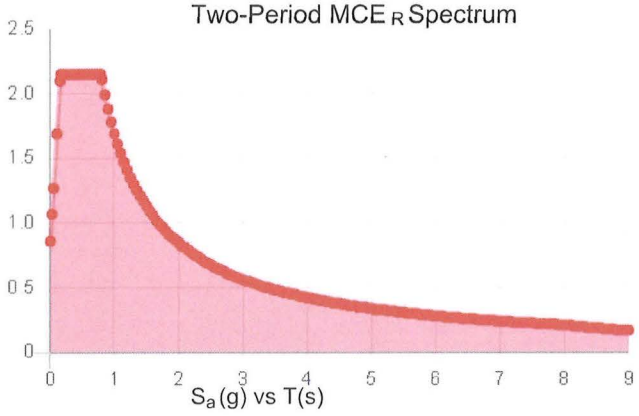
Multi-Period MCE_R Spectrum



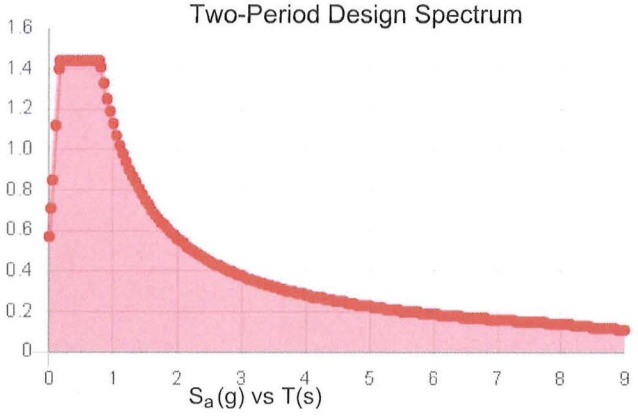
Multi-Period Design Spectrum



Two-Period MCE_R Spectrum



Two-Period Design Spectrum



MCE_R Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

Design Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

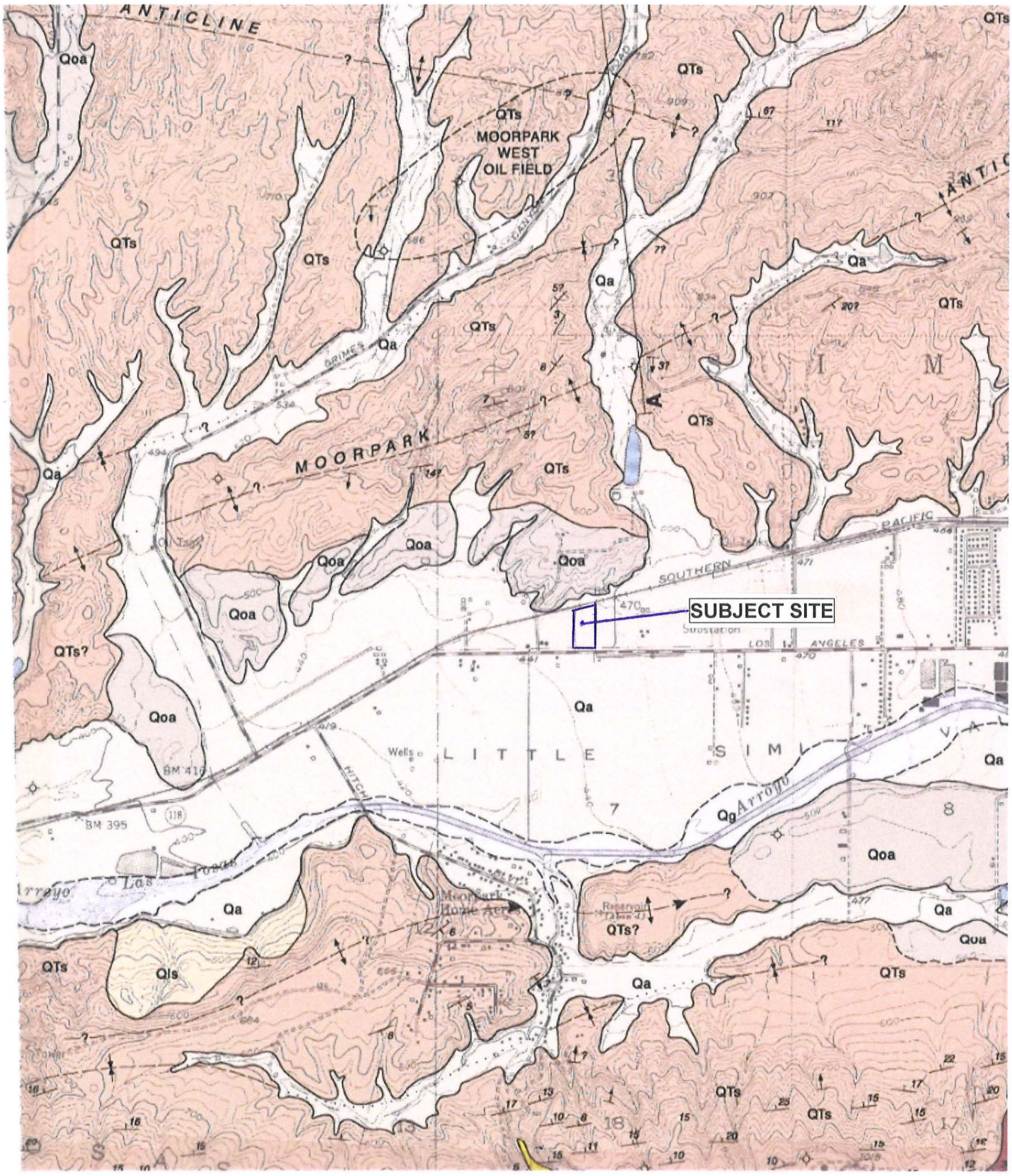
Data Accessed: Tue Mar 29 2022

Date Source:
USGS Seismic Design Maps based on ASCE/SEI 7-22 and ASCE/SEI 7-22 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-22 Ch. 21 are available from USGS.

The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided "as is" and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

ASCE does not intend, nor should anyone interpret, the results provided by this Tool to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the contents of this Tool or the ASCE 7 standard.

In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE 7 Hazard Tool.



NorCal Engineering

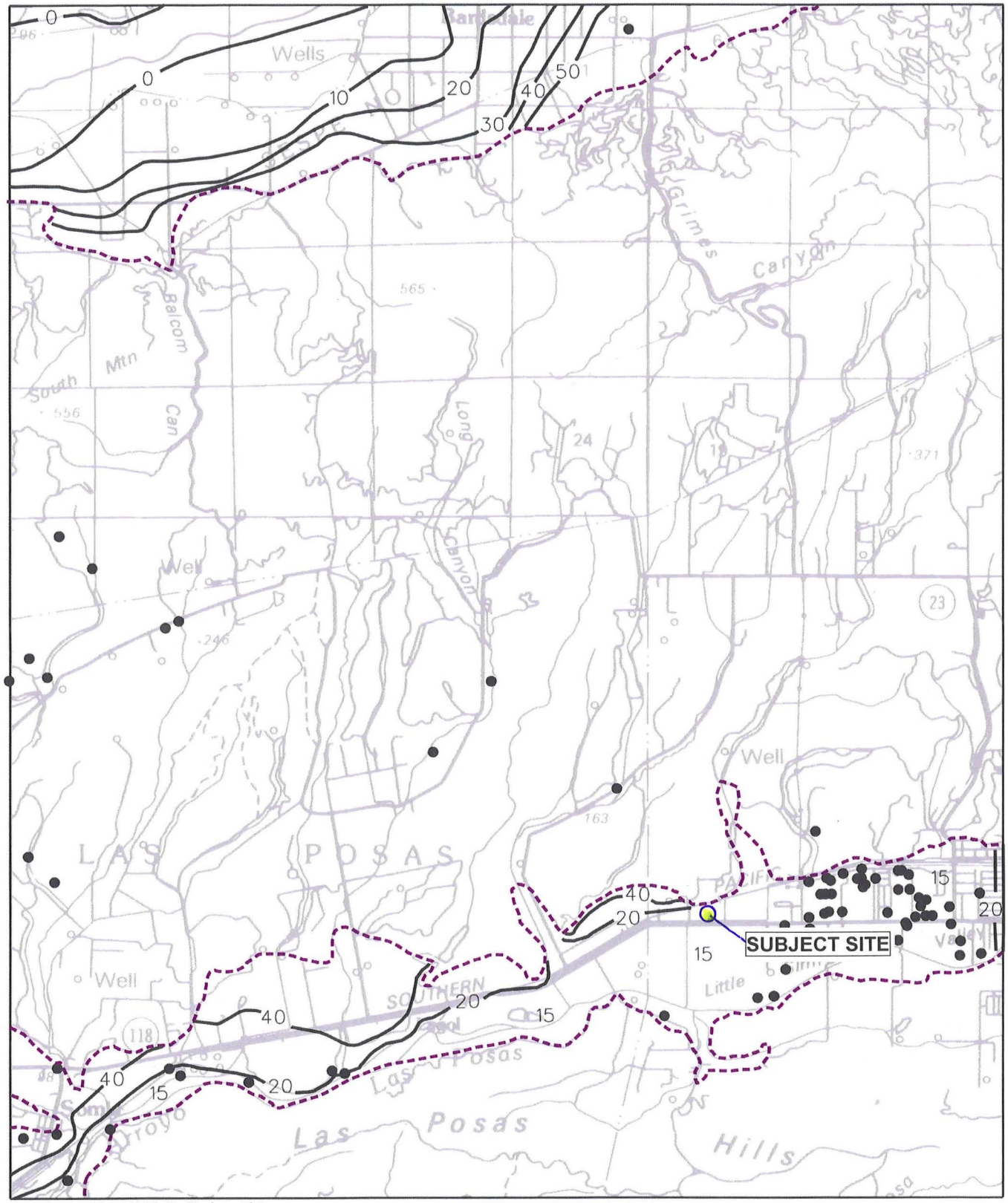
SOILS AND GEOTECHNICAL CONSULTANTS

PROJECT: 21889-20	DATE: MARCH 2022

GEOLOGIC MAP OF THE MOORPARK QUADRANGLE

THOMAS W. DIBBLEE JR. 1992


SUBJECT SITE
VENTURA
LOS ANGELES
SIMI VALLEY
MOORPARK
SIMI HILLS
SANTA SUSANA MTNS
SANTA MONICA MTNS
SANTA ROSA VALLEY
SANTA PAULA
OAK RIDGE
SIMI
SANTA ROSA
CAMARILLO
SANTA PAULA
SANTA CLARA
SANTA CLARA RIVER
SANTA SUSANA PASS
SANTA MONICA
SANTA ROSA



Base map enlarged from U.S.G.S. 30 x 60–minute series

Plate 1.2 Historically shallow ground–water depths and borehole data points in alluviated valley areas of the Moorpark Quadrangle.

Alluviated Valley

20 Historically shallow ground–water depth contours (in feet)

Borehole Site

15 Historically shallow ground–water depth where same value occurs over a broad area (in feet)

ONE MILE

Scale

SITE LOCATION: _____

GEOTECHNICAL REPORT: _____

GEOLOGY REPORT: _____

DEPTH TO WATER TABLE = 25'

EARTHQUAKE MAGNITUDE = 6.7

PEAK GROUND ACCELERATION = 0.87g

DEPTH BELOW FINAL GRADE (FEET)	MOIST DENSITY (PCF)	σ_o TOTAL STRESS (PSF)	$\bar{\sigma}_o$ EFFECTIVE STRESS (PSF)	$\sigma_o/\bar{\sigma}_o$ (-)	r_d (-)	① $\tau_{h1}/\bar{\sigma}_o$ (-)	N VALUE (BLOWS/FT)	RELATIVE DENSITY (%)	C_N (-)	C_E (-)	C_B (-)	C_R (-)	C_S (-)	$(N_1)_{60}$ (BLOWS/FT)	FINES (%)	CRR M=7.5	MSF (-)	CRR M=7.0	LIQ. F.S.
5	110	550	Same	1.00	0.99	0.57	7	60	>1.6	1.00	1.05	0.70	1.20	>10	15	>0.16	1.5	>0.24	>0.5
10	115	1125			0.96	0.55	9	60	1.3			0.75		11	31	0.20		0.30	0.5
15	120	1725			0.92	0.53	4	40	1.1			0.85		5	61	>0.13		>0.20	>0.4
20	125	2350			0.87	0.50	10	55	0.92			0.90		10.5	66	>0.19		>0.30	>0.6
25		2975	2663	1.12	0.80	0.51	16	65	0.88			0.95		17	8	0.20		0.30	0.6
30		3600	2976	1.21	0.74	0.51	12	55	0.85			1.00		13	66	>0.22		>0.33	>0.6
35		4225	3289	1.28	0.68	0.50	21	65	0.81					21.5	4	0.24		0.36	0.7
40		4850	3602	1.35	0.64	0.49	21	65	0.78					20.5	4	0.22		0.33	0.7
45		5475	3915	1.40	0.61	0.49	32	75	0.76					30.5	7	>0.50		>0.75	>1.5
50		6100	4228	1.44	0.58	0.48	30	70	0.73					28	8	0.45		0.68	1.4

① INDUCED CYCLIC STRESS RATIO = $\tau_{ave}/\bar{\sigma}_o = 0.65 \cdot \frac{a_{max}}{g} \cdot \frac{\sigma_o}{\bar{\sigma}_o} \cdot r_d$

- C_E = Corr. - Energy Ratio = Energy Ratio / 60%
- C_B = Corr. - Borehole Dia. = 1.15 for 8" dia. borehole
- C_R = Corr. - Rod Length
- C_S = Corr. - Sampling Method

Actual Energy Ratio = 0.67-1.17 (Safety Hammer)
= 0.50-1.00 (Donut Hammer)

Sampling Method = 1.0 Standard sampler
= ~~1.2 Sampler w/o liners~~

NorCal Engineering
SOILS AND GEOTECHNICAL CONSULTANTS

PROJECT 21889-20 | DATE JULY, 2020

EVALUATION OF LIQUEFACTION POTENTIAL

SEISMIC SETTLEMENT EVALUATION ⇒ GWT @ 20'

EQ Magnitude = 6.7, Hor. Ground Acceleration = 0.87 g

Depth (ft)	$N_{1,60}$ (Blows/ft)	Fines (%)	EQ CSR	M_{design} / $M_{7.5}$	Design CSR	Vert. Strain	Seismic Settle	Liquefaction F.S.
				1.5				
20-25'	17	8	0.51		0.34	1.7%	1.0"	0.6
25-30'	13 (20)	66 (5)	0.51		0.34	1.5%	0.9"	>0.6
30-35'	21.5	4	0.50		0.33	1.4%	0.8"	0.7
35-40	20.5	4	0.49		0.32	1.5%	0.9"	0.7

$\Sigma S = 3.6"$

Say $\Delta_{EQ} = 3\frac{1}{2}"$ ←

Appendix D
Soil Infiltration Testing

NORCAL ENGINEERING

SOILS AND GEOTECHNICAL CONSULTANTS

PERCOLATION TEST DATA

Client: Amir Development Company	**Date:** 3/25/2022
Project No.: 21889-20	**Tested By:** J.S.
Test Hole: 1	**USCS Soil Classification:**
Depth of Test Hole: 11'	**Sides (if rectangular):**
Diameter of Test Hole: 6"	**Length:**
Sandy Soil Criteria Test*:	**Width:**

TRIAL NO.	START TIME	STOP TIME	TIME INTERVAL (MIN)	INITIAL DEPTH TO WATER (IN)	FINAL DEPTH TO WATER (IN)	CHANGE IN WATER LEVEL (IN)	GREATER THAN OR EQUAL TO 6"
1	10:00	10:23	23	114.0	132.0	18.0	
2	10:23	10:47	24	115.0	132.0	17.0	

*If two consecutive measurements show that six inches of water seeps away in less than 25 minutes, the test shall be run for an additional hour with measurements taken every 10 minutes. Otherwise, pre-soak (fill) overnight. Obtain at least twelve measurements per hole over at least six hours (approximately 30-minute intervals) with a precision of at least 0.25".

TRIAL NO	START TIME	STOP TIME	ΔT TIME INTERVAL (MIN)	Do INITIAL DEPTH TO WATER (IN)	Df FINAL DEPTH TO WATER (IN)	ΔD CHANGE IN WATER LEVEL (IN)	PERCOLATION RATE (MIN/IN)
1	10:47	10:57	10	117.0	117.5	4.5	
2	10:57	11:07	10	117.0	122.0	5.0	
3	11:07	11:17	10	112.0	117.0	5.0	
4	11:17	11:27	10	115.0	120.0	5.0	
5	11:27	11:37	10	117.0	122.5	4.5	
6	11:37	11:47	10	115.0	120.0	5.0	
7							
8							
9							
10							
11							
12							
13							
14							
15							

COMMENTS:

NORCAL ENGINEERING

SOILS AND GEOTECHNICAL CONSULTANTS

PERCOLATION TEST DATA

Client: Amir Development Company	**Date:** 3/25/2022
Project No.: 21889-20	**Tested By:** J.S.
Test Hole: 2	**USCS Soil Classification:**
Depth of Test Hole: 11.5'	**Sides (if rectangular):**
Diameter of Test Hole: 6"	**Length:**
Sandy Soil Criteria Test*:	**Width:**

TRIAL NO.	START TIME	STOP TIME	TIME INTERVAL (MIN)	INITIAL DEPTH TO WATER (IN)	FINAL DEPTH TO WATER (IN)	CHANGE IN WATER LEVEL (IN)	GREATER THAN OR EQUAL TO 6"
1	10:03	10:16	13	122.0	138.0	16.0	
2	10:16	10:37	21	120.0	138.0	18.0	

*If two consecutive measurements show that six inches of water seeps away in less than 25 minutes, the test shall be run for an additional hour with measurements taken every 10 minutes. Otherwise, pre-soak (fill) overnight. Obtain at least twelve measurements per hole over at least six hours (approximately 30-minute intervals) with a precision of at least 0.25".

TRIAL NO	START TIME	STOP TIME	ΔT TIME INTERVAL (MIN)	Do INITIAL DEPTH TO WATER (IN)	Df FINAL DEPTH TO WATER (IN)	ΔD CHANGE IN WATER LEVEL (IN)	PERCOLATION RATE (MIN/IN)
1	10:37	10:47	10	123.0	133.0	10.0	
2	10:47	10:57	10	121.0	131.0	10.0	
3	10:57	11:07	10	115.0	124.5	9.5	
4	11:07	11:17	10	115.0	125.0	10.0	
5	11:17	11:27	10	118.0	117.5	9.5	
6	11:27	11:37	10	123.0	132.0	9.0	
7							
8							
9							
10							
11							
12							
13							
14							
15							
COMMENTS:							

NORCAL ENGINEERING
SOILS AND GEOTECHNICAL CONSULTANTS

PERCOLATION TEST DATA

Client: Amir Development Company	**Tested By:** J.S. Jr.
Project No.: 21889-20	**Date Tested:** 6/25/2020
Test Hole: 1	**Caving:**
Depth of Test Hole: 5'	**Notes:**
Diameter of Test Hole: 6"	
Date Excavated: 6/25/2020	

PRE-SOAK

TIME	PRE-SOAK NO.	TIME INTERVAL	TOTAL ELAPSED TIME	INITIAL WATER LEVEL	FINAL WATER LEVEL	CHANGE IN WATER LEVEL
7:48	1	2	2	38.0	50.0	12.0
7:50						
7:50	2	3	5	38.0	50.0	12.0
7:53						

PERCOLATION TEST

TIME	PRE-SOAK NO.	TIME INTERVAL	TOTAL ELAPSED TIME	INITIAL WATER LEVEL	FINAL WATER LEVEL	CHANGE IN WATER LEVEL
7:53	1	5	5	38.0	50.0	12.0
7:58						
7:58	2	5	10	38.0	50.0	12.0
8:03						
8:03	3	6	16	38.0	50.0	12.0
8:09						
8:09	4	6	22	38.0	50.0	12.0
8:15						
8:15	5	7	29	38.0	50.0	12.0
8:22						
8:22	6	8	37	38.0	50.0	12.0
8:30						
8:30	7	7	44	38.0	50.0	12.0
8:37						
8:37	8	7	51	38.0	50.0	12.0
8:44						

Copyright 2013 M. Barone

NORCAL ENGINEERING
SOILS AND GEOTECHNICAL CONSULTANTS

PERCOLATION TEST DATA

Client: Amir Development Company	**Tested By:** J.S. Jr.
Project No.: 21889-20	**Date Tested:** 6/25/2020
Test Hole: 1	**Caving:**
Depth of Test Hole: 5'	**Notes:**
Diameter of Test Hole: 6"	
Date Excavated: 6/25/2020	

PRE-SOAK

TIME	PRE-SOAK NO.	TIME INTERVAL	TOTAL ELAPSED TIME	INITIAL WATER LEVEL	FINAL WATER LEVEL	CHANGE IN WATER LEVEL

PERCOLATION TEST

TIME	PRE-SOAK NO.	TIME INTERVAL	TOTAL ELAPSED TIME	INITIAL WATER LEVEL	FINAL WATER LEVEL	CHANGE IN WATER LEVEL
8:44	9	8	59	48.0	60.0	12.0
8:52						
8:52	10	7	66	48.0	60.0	12.0
8:59						
8:59	11	8	74	48.0	60.0	12.0
9:07						
9:07	12	9	83	48.0	60.0	12.0
9:16						
9:16	13	8	91	48.0	60.0	12.0
9:24						
9:24	14	9	100	48.0	60.0	12.0
9:33						
9:33	15	10	110	48.0	60.0	12.0
9:43						
9:43	16	10	120	48.0	60.0	12.0
9:53						

NORCAL ENGINEERING
SOILS AND GEOTECHNICAL CONSULTANTS

Client: Amir Development Company	**Tested By:** J.S. Jr.
Project No.: 21889-20	**Date Tested:** 6/25/2020
Test Hole: 2	**Caving:**
Depth of Test Hole: 10'	**Notes:**
Diameter of Test Hole: 6"	
Date Excavated: 6/25/2020	

PRE-SOAK

TIME	PRE-SOAK NO.	TIME INTERVAL	TOTAL ELAPSED TIME	INITIAL WATER LEVEL	FINAL WATER LEVEL	CHANGE IN WATER LEVEL
8:10	1	5	5	108.0	120.0	12.0
8:15						
8:15	2	7	12	107.0	120.0	13.0
8:22						

PERCOLATION TEST

TIME	PRE-SOAK NO.	TIME INTERVAL	TOTAL ELAPSED TIME	INITIAL WATER LEVEL	FINAL WATER LEVEL	CHANGE IN WATER LEVEL
8:22	1	8	8	107.0	120.0	13.0
8:30						
8:30	2	9	17	107.0	120.0	13.0
8:39						
8:39	3	9	26	107.0	120.0	13.0
8:48						
8:48	4	8	34	108.0	120.0	12.0
8:56						
8:56	5	8	42	108.0	120.0	12.0
9:04						
9:04	6	10	52	107.0	120.0	12.0
9:14						
9:14	7	10	62	107.0	118.0	11.0
9:24						
9:24	8	10	72	108.0	119.0	11.0
9:34						

Copyright 2013 M. Barone

PERCOLATION TEST DATA

NORCAL ENGINEERING
SOILS AND GEOTECHNICAL CONSULTANTS

Client: Amir Development Company	**Tested By:** J.S. Jr.
Project No.: 21889-20	**Date Tested:** 6/25/2020
Test Hole: 2	**Caving:**
Depth of Test Hole: 10'	**Notes:**
Diameter of Test Hole: 6"	
Date Excavated: 6/25/2020	

PRE-SOAK

TIME	PRE-SOAK NO.	TIME INTERVAL	TOTAL ELAPSED TIME	INITIAL WATER LEVEL	FINAL WATER LEVEL	CHANGE IN WATER LEVEL

PERCOLATION TEST

TIME	PRE-SOAK NO.	TIME INTERVAL	TOTAL ELAPSED TIME	INITIAL WATER LEVEL	FINAL WATER LEVEL	CHANGE IN WATER LEVEL
9:34	9	10	82	108.0	119.0	11.0
9:44						
9:44	10	10	92	108.0	118.0	10.0
9:54						
9:54	11	10	102	107.0	118.0	11.0
10:04						
10:04	12	10	112	108.0	119.0	11.0
10:14						
10:14	13	10	122	107.0	117.0	10.0
10:24						

Copyright 2013 M. Barone

SOIL INFILTRATION RATE CALCS ⇒ Auger Boring

Location:	TH-1	TH-2
• Depth =	5.0'	10.0'
• Hole Dia. =	6"	6"
• Drop = Δd	12"	10"
• Time = Δt Interval	10 min	10 min
• Preadjusted Perc. Rate	72 in/hr	60 in/hr
• Initial Water Depth = d_1	12"	13"
• Reduction Factor = R_f	3.0	3.7
• INFILTRATION RATE	24 in/hr	16.4 in/hr

$$\text{Infiltration Rate} = \frac{\text{Pre adjusted Perc. Rate}}{\text{Reduction Factor}}$$

$$\text{Reduction Factor} = R_f = \left[\frac{2 \cdot d_1 - \Delta d}{\text{Dia.}}\right] + 1$$

NorCal Engineering
SOILS AND GEOTECHNICAL CONSULTANTS

Job No. 21889-20 | DATE JULY, 2020

SOIL INFILTRATION RATE CALCS ⇒ Auger Boring

Location:	B-3	B-4
• Depth =	11.0'	11.5"
• Hole Dia. =	6"	6"
• Drop = Δd	5"	9.5"
• Time = Δt Interval	10 min	10 min
• Preadjusted Perc. Rate	30 in/hr	57 in/hr
• Initial Water Depth = d_1	20"	20"
• Reduction Factor = R_f	6.83	6.08
• INFILTRATION RATE	4.4 in/hr	9.4 in/hr

$$\text{Infiltration Rate} = \frac{\text{Preadjusted Perc. Rate}}{\text{Reduction Factor}}$$

$$\text{Reduction Factor} = R_f = \left[\frac{2 \cdot d_1 - \Delta d}{\text{Dia.}}\right] + 1$$

NorCal Engineering
SOILS AND GEOTECHNICAL CONSULTANTS

SOIL INFILTRATION RATE CALCULATIONS

DATE

PALEONTOLOGICAL RECORDS SEARCH, LITURATURE REVIEW SUMMARY REPORT FOR THE PENTAIR INDUSTRIAL EXPANSION PROJECT

City of Moorpark

March 15, 2022
9620 Chesapeake Drive, Suite 202
San Diego, CA 92123
(21321)

Freddy Carrillo
Associate Planner
City of Moorpark
799 Moorpark Ave
Moorpark, CA 93021

Subject: Pentair Industrial Expansion Project Paleontological Records Search and Literature Review Summary Letter Report

Dear Mr. Carrillo,

Chambers Group, Inc. (Chambers Group) is providing this report for paleontological resources services to City of Moorpark in support of the proposed Pentair Industrial Expansion Project (Project) in the City of Moorpark, Ventura County, California. Chambers Group has completed a Desktop Assessment of Paleontological Resources sensitivity. This assessment included paleontological resources record search and literature review for the study area (Figure 1). The purpose of the review was to gather and analyze information needed to assess the potential for impacts to paleontological resources within the proposed Project site.

Location and Geologic Setting

The proposed Pentair Industrial Expansion Project in Moorpark is located within Little Simi Valley, an area with a complex geologic history. As part of the Transverse Ranges geomorphic province, the region is comprised of east-west trending sequence of mountain ranges and valleys. The province itself can be divided into over a dozen smaller regions including the late Cenozoic Ventura basin, an elongated sedimentary trough in which Moorpark is located (Squires 1997). The western portion of the basin is covered by the Pacific Ocean while the eastern boundary of the basin is the San Gabriel fault. The Ventura basin is bound by the Santa Ynez Mountains and Topatopa Mountains to the north and by the Santa Monica Mountains to the south.

Methods of Review

A paleontological record search was requested by the Natural History Museum of Los Angeles County on November 5, 2021. The records search results were provided to Chambers Group on November 19, 2021. The search produced no known fossil localities that lie within the Proposed Project site, but localities have been documented nearby within the same sedimentary deposits found within the Project site (Bell 2021). A fossil mammoth (*Mammuthus*) and a specimen belonging to the horse family (*Equidae*) (LACM VP 1680) was discovered from an unknown Pleistocene formation at depths 14-15 feet below ground surface in Conejo Valley, 1 mile northwest of Newbury Park. A fossil horse (*Equus occidentalis*) ([locality] LACM VP 6107) was found at the surface in Pleistocene terrace deposits east of Alamos Canyon and north of Hwy 118, Strathearn, and a Pleistocene-aged Mastodon (Mammut) (LACM VP 7455) from unknown depths was found at the Shea Homes Big Sky Ranch Development project off of Legacy Drive, north of Simi Valley. In addition to the macrovertebrates, scallops (*Aequipecten sp.*) (LACM IP 1146) were found at the surface where the Pico Formation was exposed along the south flank of the Las Posas Hills between Little Simi Valley and Santa Rosa

Valley, unspecified surface finds of invertebrates (LACM IP 30280) from the Las Posas Sand south of Presilla Road, and an eagle ray (*Myliobatis*) was found at unknown depths from the Los Posas Sand at Los Posas Hills, Camarillo.

A self-search was also conducted through the University of California Museum of Paleontology Berkeley (UCMP) database. A tooth from a fossil horse (*Equus occidentalis*) (#32958) dating to the Pleistocene/Pliocene was discovered from the Saugus Formation in Camarillo, Ventura County.

PALEONTOLOGICAL RECORDS SEARCH, LITURATURE REVIEW SUMMARY REPORT FOR THE PENTAIR INDUSTRIAL EXPANSION PROJECT

City of Moorpark

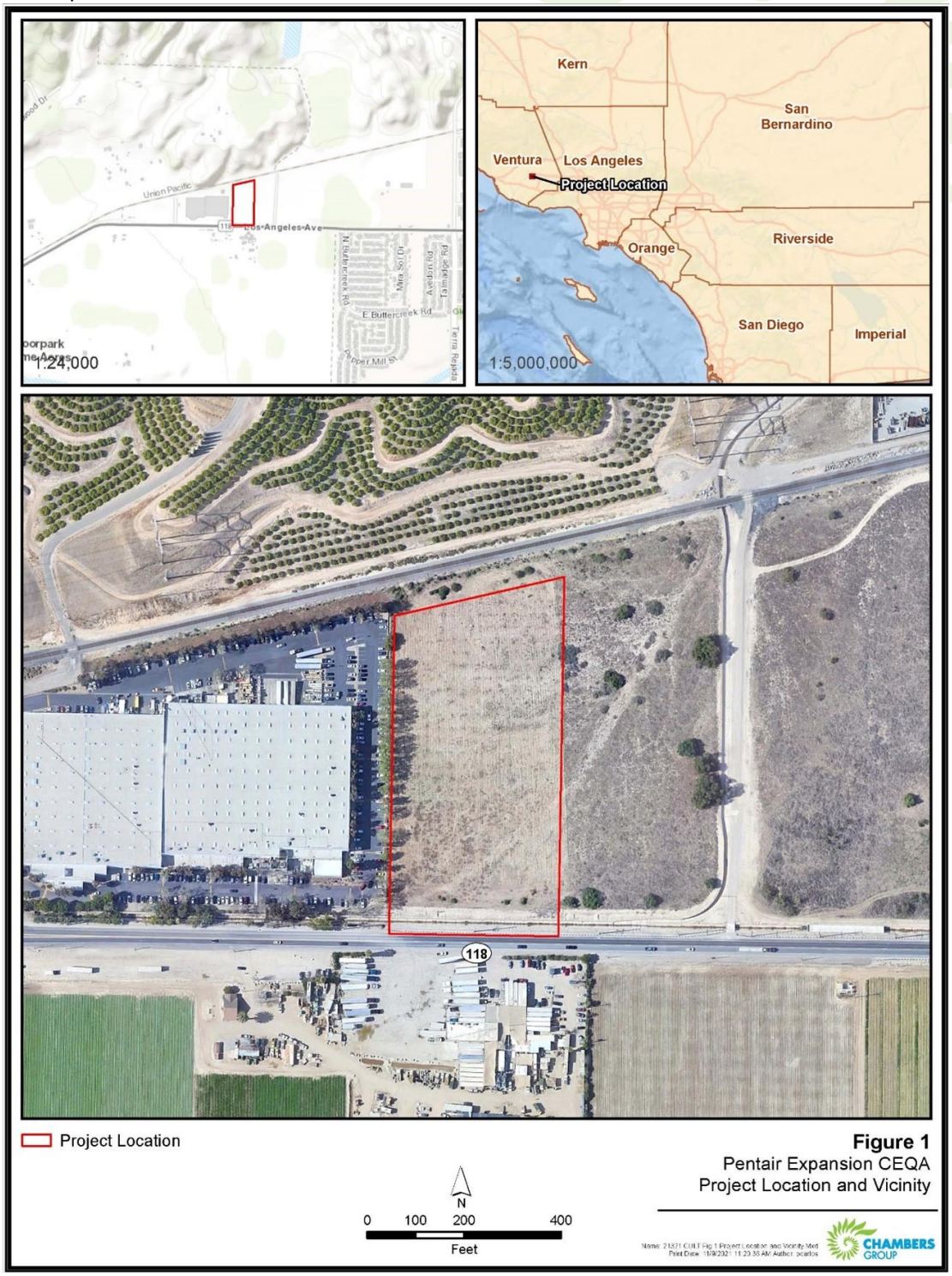


Figure 1: Project Location and Vicinity

PALEONTOLOGICAL RECORDS SEARCH, LITURATURE REVIEW SUMMARY REPORT FOR THE PENTAIR INDUSTRIAL EXPANSION PROJECT

City of Moorpark

Discussion

As evident above, the occurrences of paleontological resources are closely tied to the geologic units (formations or members) that contain them. With this in mind, a detailed literature search was conducted on the geologic units underlying the Project site as well as their paleontological sensitivity to produce paleontological resources. Geologic mapping by Jennings and Strand (1969) indicates that Holocene alluvium (last 10,000 years) and upper Pleistocene (500,000 to 10,000 years) nonmarine terrace deposits have been mapped within the proposed Project. Given that paleontological resources have been documented nearby in deeper units, there is the potential to impact the marine to nonmarine Saugus Formation (late Pliocene to late Pleistocene), Las Posas Formation (early to middle Pleistocene), and Pliocene to middle Pleistocene Pico Formation as well. Below is a brief description of each geologic unit in the Project site.

Holocene Alluvium

Holocene alluvium surficial deposits cover the valley floor. This alluvium is composed of unconsolidated sandy, silty, clay materials representing alluvial fan and valley deposits, colluvium, active alluvial fans, and active stream deposits. These deposits are generally void of fossils due to their relatively young age.

Late Pleistocene Nonmarine Terrace Deposits

Quaternary terrace deposits appear mainly as soil-like varying from fine sandy clays to clayey sands to reddish-brown medium to very coarse sands and gravels (City of Moorpark 1994). As fossil vertebrates have been identified from Pleistocene deposits in the past, there is a likelihood of encountering similar fossils during Project construction.

Late Pliocene to late Pleistocene Saugus Formation

The Plio-Pleistocene Saugus Formation can be divided into a lower marine portion and a nonmarine upper portion. The lower portion is composed of interfingering sandstone, coquinite, and conglomerate deposits with occurrences of limestone and laminated mudstone representing a shallow marine environment (White 1985). The sandstone in this lower unit is very rich in macrofossils including snails, clams, sea urchins, sand dollars, great-white shark teeth, whale, and land plants (Squire 1997). The upper portion of the Saugus Formation consists of poorly indurated, medium to coarse sandstone interbedded with pebble-boulder conglomerate representing a river floodplain deposit (White 1985). The sandstone and conglomerate within this upper portion have yielded fossil remains of horse, tapir, deer, and mastodons (Squire 1997). The contact between the lower and upper is gradational and is represented by interfingering of shallow-marine beds with river deposits.

Early to middle Pleistocene Las Posas Formation

The Las Posas Formation consists of shallow marine, coarse sandstone silty sandstone, and pebbly sandstone with interbedded mudstone and conglomerate (National Park Service 2016). The formation crops out on either side of the Las Posas Valley in the Las Posas Hills, on the south side of the South Mountain/Oak Ridge west of Long Canyon, and west of Fillmore on the north side of the Santa Clara River in Ventura Basin. It conformably overlies the Pico Formation and is dominated by invertebrate fossils and bivalve-dominated beds.

Pliocene to middle Pleistocene Pico Formation

The Upper Pliocene Pico Formation represents marine siltstone and silty shale with minor sandstone and pebbly sandstone. The formation interfingers with brackish-water and nonmarine beds of the overlying Saugus Formation (Winterer and Durham 1962). Turbidity currents found in the lower part of the Pico Formation suggest the likely deposition of the mixed depth assemblage of molluscan faunas.

PALEONTOLOGICAL RECORDS SEARCH, LITURATURE REVIEW SUMMARY REPORT FOR THE PENTAIR INDUSTRIAL EXPANSION PROJECT

City of Moorpark

Recommendations

Due to the sensitivity of the Project site and surrounding area to produce paleontological resources during ground disturbing activities, mitigation measures that are in line with standards set by the City of Moorpark and will serve to reduce potential impacts are recommended prior to ground disturbance. As well as following the County of Ventura's goals pertaining to paleontological resources outlined in Sections 1.8.1 & 1.8.2 of the Resources element of the County of Ventura General Plan, these mitigation measures are recommended to ensure that the Guidelines of the Society of Vertebrate Paleontology (SVP) and the Guidelines of the State Office of Historic Preservation are fulfilled and shall be performed in consultation with professional archaeologists and paleontologists. The following mitigation measures should be considered and implemented in support of this Project with the intent to reduce potential impacts to paleontological resources to less than significant:

MM PAL-01: Prior to issuance of a Zoning Clearance for a grading permit, the applicant shall be required to obtain the services of a qualified project paleontologist to remain on-call for the duration of the proposed ground disturbing construction activity. The paleontologist selected must be approved in writing by the Community Development Director. Upon approval or request by the Community Development Director, a paleontological mitigation plan (PMP) outlining procedures for paleontological data recovery shall be prepared for the Proposed Project and submitted to the Community Development Director for review and approval. The development and implementation of the PMP shall include consultations with the Applicant's engineering geologist as well as a requirement that the curation of all specimens recovered under any scenario shall be through the Los Angeles County Museum of Natural History (LACMNH). All specimens become the property of the City of Moorpark unless the City chooses otherwise. If the City accepts ownership, the curation location may be revised. The PMP shall include developing a multilevel ranking system, or Potential Fossil Yield Classification (PFYC), as a tool to demonstrate the potential yield of fossils within a given stratigraphic unit. The PMP shall outline the monitoring and salvage protocols to address paleontological resources encountered during ground disturbing activities. As well as the appropriate recording, collection, and processing protocols to appropriately address any resources discovered. The cost of data recovery is limited to the discovery of a reasonable sample of available material. The interpretation of reasonableness rests with the Community Development Director.

MM-PAL-2 At the completion of all ground-disturbing activities, the project paleontologist shall prepare a final paleontological mitigation report summarizing all monitoring efforts and observations, as performed in line with the PMP, and all paleontological resources encountered, if any. As well as providing follow-up reports of any specific discovery, if necessary.

Chambers Group is available to assist with any further support, document preparation, or consultation related to Paleontological resources. Please contact the Chambers Group Project Manager/Planner, Meghan Gibson, or the Chambers Group Principal Investigator for Paleontology and author of this report at the contact information below if you have any questions or comments regarding this report.

PALEONTOLOGICAL RECORDS SEARCH, LITURATURE REVIEW SUMMARY REPORT FOR THE PENTAIR INDUSTRIAL EXPANSION PROJECT

City of Moorpark
Sincerely,
CHAMBERS GROUP, INC.



Niranjala Kottachchi
Principal Investigator, Paleontology
949-261-5414
5 Hutton Centre Drive, Suite 750
Santa Ana, CA 92707

References

Bell, A. 2021. Paleontological resources for the Pentair Industrial Expansion Project. Natural History Museum of Los Angeles County: record search results.

City of Moorpark 1994. Carlsberg Specific Plan, 78p.

Jennings, O.P. and Strand, R.G. 1969. Geologic Map of California: Los Angeles Sheet, 1:250,000.

National Park Service 2016. Santa Monica Mountains National Recreation Area: GRI Ancillary Map Information Document, 54p.

Squire, R.L. 1997. Geologic Profile of Simi Valley, Chapter 9, p. 293-297.

White, D.R. 1985. Fluvial-dominated deltaic deposits of the marine Plio-Pleistocene Lower Saugus Formation, Northern Simi Valley, California, Master of Science Thesis, 86p.

Winterer, E.L. and Durham, D.L. 1962. Geology of Southeastern Ventura Basin Los Angeles County California: A study of the stratigraphy, structure, and occurrence of oil in the late Cenozoic Ventura basin. Geological Survey Professional Paper 334-H.

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Pentair Warehouse Expansion

Ventura County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	80.57	1000sqft	2.46	80,566.00	0
General Office Building	4.00	1000sqft	0.19	4,000.00	0
Parking Lot	3.00	Acre	3.00	130,680.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total project site = 5.65 acres

Construction Phase -

Vehicle Trips - Daily Trip Rates set to match TIA

Operational Off-Road Equipment - 4 Electric Powered Forklifts 8 hours per day

Water Mitigation - Install Low-Flow fixtures and Use Water-Efficient Irrigation Systems per Title 24 Requirements

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	PhaseEndDate	3/22/2024	12/29/2023
tblConstructionPhase	PhaseEndDate	1/26/2024	12/29/2023

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstructionPhase	PhaseEndDate	3/10/2023	2/10/2023
tblConstructionPhase	PhaseEndDate	2/23/2024	12/29/2023
tblConstructionPhase	PhaseEndDate	2/10/2023	1/13/2023
tblConstructionPhase	PhaseStartDate	2/24/2024	12/2/2023
tblConstructionPhase	PhaseStartDate	3/11/2023	2/11/2023
tblConstructionPhase	PhaseStartDate	2/11/2023	1/14/2023
tblConstructionPhase	PhaseStartDate	1/27/2024	12/2/2023
tblConstructionPhase	PhaseStartDate	1/28/2023	1/1/2023
tblLandUse	LotAcreage	1.85	2.46
tblLandUse	LotAcreage	0.09	0.19
tblOperationalOffRoadEquipment	OperFuelType	Diesel	Electrical
tblOperationalOffRoadEquipment	OperLoadFactor	0.20	0.20
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	4.00
tblVehicleTrips	ST_TR	2.21	14.50
tblVehicleTrips	ST_TR	1.74	1.84
tblVehicleTrips	SU_TR	0.70	14.50
tblVehicleTrips	SU_TR	1.74	1.84
tblVehicleTrips	WD_TR	9.74	14.50
tblVehicleTrips	WD_TR	1.74	1.84

2.0 Emissions Summary

Pentair Warehouse Expansion - Ventura County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.6727	2.2666	2.5975	5.3300e-003	0.2840	0.1018	0.3857	0.1159	0.0954	0.2113	0.0000	473.8348	473.8348	0.0891	0.0130	479.9367
Maximum	**0.6727**	**2.2666**	**2.5975**	**5.3300e-003**	**0.2840**	**0.1018**	**0.3857**	**0.1159**	**0.0954**	**0.2113**	**0.0000**	**473.8348**	**473.8348**	**0.0891**	**0.0130**	**479.9367**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.6727	2.2666	2.5975	5.3300e-003	0.2840	0.1018	0.3857	0.1159	0.0954	0.2113	0.0000	473.8344	473.8344	0.0891	0.0130	479.9363
Maximum	**0.6727**	**2.2666**	**2.5975**	**5.3300e-003**	**0.2840**	**0.1018**	**0.3857**	**0.1159**	**0.0954**	**0.2113**	**0.0000**	**473.8344**	**473.8344**	**0.0891**	**0.0130**	**479.9363**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2023	3-31-2023	0.6501	0.6501
2	4-1-2023	6-30-2023	0.5765	0.5765
3	7-1-2023	9-30-2023	0.5828	0.5828
		Highest	0.6501	0.6501

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3798	1.0000e-005	8.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5600e-003	1.5600e-003	0.0000	0.0000	1.6700e-003
Energy	1.8900e-003	0.0171	0.0144	1.0000e-004		1.3000e-003	1.3000e-003		1.3000e-003	1.3000e-003	0.0000	94.9180	94.9180	6.7900e-003	1.1200e-003	95.4223
Mobile	0.1104	0.1350	1.0300	2.0400e-003	0.2152	1.6500e-003	0.2169	0.0575	1.5400e-003	0.0590	0.0000	190.3575	190.3575	0.0133	9.1700e-003	193.4231
Offroad	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	16.1297	0.0000	16.1297	0.9532	0.0000	39.9606
Water						0.0000	0.0000		0.0000	0.0000	6.1366	45.5251	51.6617	0.6341	0.0154	72.0886
Total	**0.4921**	**0.1521**	**1.0452**	**2.1400e-003**	**0.2152**	**2.9500e-003**	**0.2182**	**0.0575**	**2.8400e-003**	**0.0603**	**22.2662**	**330.8022**	**353.0684**	**1.6075**	**0.0256**	**400.8962**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3798	1.0000e-005	8.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5600e-003	1.5600e-003	0.0000	0.0000	1.6700e-003
Energy	1.8900e-003	0.0171	0.0144	1.0000e-004		1.3000e-003	1.3000e-003		1.3000e-003	1.3000e-003	0.0000	94.9180	94.9180	6.7900e-003	1.1200e-003	95.4223
Mobile	0.1104	0.1350	1.0300	2.0400e-003	0.2152	1.6500e-003	0.2169	0.0575	1.5400e-003	0.0590	0.0000	190.3575	190.3575	0.0133	9.1700e-003	193.4231
Offroad	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	16.1297	0.0000	16.1297	0.9532	0.0000	39.9606
Water						0.0000	0.0000		0.0000	0.0000	5.1793	38.5048	43.6840	0.5352	0.0130	60.9247
Total	**0.4921**	**0.1521**	**1.0452**	**2.1400e-003**	**0.2152**	**2.9500e-003**	**0.2182**	**0.0575**	**2.8400e-003**	**0.0603**	**21.3089**	**323.7818**	**345.0907**	**1.5085**	**0.0232**	**389.7323**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**4.30**	**2.12**	**2.26**	**6.15**	**9.36**	**2.78**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2023	1/13/2023	5	10	
2	Grading	Grading	1/14/2023	2/10/2023	5	20	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3	Building Construction	Building Construction	2/11/2023	12/29/2023	5	230	
4	Paving	Paving	12/2/2023	12/29/2023	5	20	
5	Architectural Coating	Architectural Coating	12/2/2023	12/29/2023	5	20	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 20

Acres of Paving: 3

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 126,849; Non-Residential Outdoor: 42,283; Striped Parking Area: 7,841 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	7.00	231	0.29
Grading	Excavators	1	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	90.00	35.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0133	0.1376	0.0912	1.9000e-004		6.3300e-003	6.3300e-003		5.8200e-003	5.8200e-003	0.0000	16.7254	16.7254	5.4100e-003	0.0000	16.8606
Total	**0.0133**	**0.1376**	**0.0912**	**1.9000e-004**	**0.0983**	**6.3300e-003**	**0.1046**	**0.0505**	**5.8200e-003**	**0.0563**	**0.0000**	**16.7254**	**16.7254**	**5.4100e-003**	**0.0000**	**16.8606**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6000e-004	1.8000e-004	2.2400e-003	1.0000e-005	7.3000e-004	0.0000	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.5643	0.5643	2.0000e-005	2.0000e-005	0.5697
Total	**2.6000e-004**	**1.8000e-004**	**2.2400e-003**	**1.0000e-005**	**7.3000e-004**	**0.0000**	**7.3000e-004**	**1.9000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**0.5643**	**0.5643**	**2.0000e-005**	**2.0000e-005**	**0.5697**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0133	0.1376	0.0912	1.9000e-004		6.3300e-003	6.3300e-003		5.8200e-003	5.8200e-003	0.0000	16.7253	16.7253	5.4100e-003	0.0000	16.8606
Total	**0.0133**	**0.1376**	**0.0912**	**1.9000e-004**	**0.0983**	**6.3300e-003**	**0.1046**	**0.0505**	**5.8200e-003**	**0.0563**	**0.0000**	**16.7253**	**16.7253**	**5.4100e-003**	**0.0000**	**16.8606**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6000e-004	1.8000e-004	2.2400e-003	1.0000e-005	7.3000e-004	0.0000	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.5643	0.5643	2.0000e-005	2.0000e-005	0.5697
Total	**2.6000e-004**	**1.8000e-004**	**2.2400e-003**	**1.0000e-005**	**7.3000e-004**	**0.0000**	**7.3000e-004**	**1.9000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**0.5643**	**0.5643**	**2.0000e-005**	**2.0000e-005**	**0.5697**

3.3 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0708	0.0000	0.0708	0.0343	0.0000	0.0343	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0171	0.1794	0.1475	3.0000e-004		7.7500e-003	7.7500e-003		7.1300e-003	7.1300e-003	0.0000	26.0606	26.0606	8.4300e-003	0.0000	26.2713
Total	**0.0171**	**0.1794**	**0.1475**	**3.0000e-004**	**0.0708**	**7.7500e-003**	**0.0786**	**0.0343**	**7.1300e-003**	**0.0414**	**0.0000**	**26.0606**	**26.0606**	**8.4300e-003**	**0.0000**	**26.2713**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3000e-004	3.0000e-004	3.7300e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	0.9406	0.9406	3.0000e-005	3.0000e-005	0.9495
Total	**4.3000e-004**	**3.0000e-004**	**3.7300e-003**	**1.0000e-005**	**1.2100e-003**	**1.0000e-005**	**1.2200e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**0.9406**	**0.9406**	**3.0000e-005**	**3.0000e-005**	**0.9495**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0708	0.0000	0.0708	0.0343	0.0000	0.0343	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0171	0.1794	0.1475	3.0000e-004		7.7500e-003	7.7500e-003		7.1300e-003	7.1300e-003	0.0000	26.0606	26.0606	8.4300e-003	0.0000	26.2713
Total	**0.0171**	**0.1794**	**0.1475**	**3.0000e-004**	**0.0708**	**7.7500e-003**	**0.0786**	**0.0343**	**7.1300e-003**	**0.0414**	**0.0000**	**26.0606**	**26.0606**	**8.4300e-003**	**0.0000**	**26.2713**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3000e-004	3.0000e-004	3.7300e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	0.9406	0.9406	3.0000e-005	3.0000e-005	0.9495
Total	**4.3000e-004**	**3.0000e-004**	**3.7300e-003**	**1.0000e-005**	**1.2100e-003**	**1.0000e-005**	**1.2200e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**0.9406**	**0.9406**	**3.0000e-005**	**3.0000e-005**	**0.9495**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1809	1.6543	1.8681	3.1000e-003		0.0805	0.0805		0.0757	0.0757	0.0000	266.5755	266.5755	0.0634	0.0000	268.1608
Total	**0.1809**	**1.6543**	**1.8681**	**3.1000e-003**		**0.0805**	**0.0805**		**0.0757**	**0.0757**	**0.0000**	**266.5755**	**266.5755**	**0.0634**	**0.0000**	**268.1608**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.9200e-003	0.1585	0.0549	7.5000e-004	0.0268	9.1000e-004	0.0277	7.7400e-003	8.7000e-004	8.6100e-003	0.0000	73.4211	73.4211	3.0100e-003	0.0110	76.7722
Worker	0.0296	0.0208	0.2576	7.0000e-004	0.0835	4.6000e-004	0.0839	0.0222	4.2000e-004	0.0226	0.0000	64.8980	64.8980	2.0800e-003	1.9100e-003	65.5178
Total	**0.0335**	**0.1792**	**0.3125**	**1.4500e-003**	**0.1103**	**1.3700e-003**	**0.1116**	**0.0299**	**1.2900e-003**	**0.0312**	**0.0000**	**138.3192**	**138.3192**	**5.0900e-003**	**0.0129**	**142.2899**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1809	1.6543	1.8681	3.1000e-003		0.0805	0.0805		0.0757	0.0757	0.0000	266.5751	266.5751	0.0634	0.0000	268.1605
Total	**0.1809**	**1.6543**	**1.8681**	**3.1000e-003**		**0.0805**	**0.0805**		**0.0757**	**0.0757**	**0.0000**	**266.5751**	**266.5751**	**0.0634**	**0.0000**	**268.1605**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.9200e-003	0.1585	0.0549	7.5000e-004	0.0268	9.1000e-004	0.0277	7.7400e-003	8.7000e-004	8.6100e-003	0.0000	73.4211	73.4211	3.0100e-003	0.0110	76.7722
Worker	0.0296	0.0208	0.2576	7.0000e-004	0.0835	4.6000e-004	0.0839	0.0222	4.2000e-004	0.0226	0.0000	64.8980	64.8980	2.0800e-003	1.9100e-003	65.5178
Total	**0.0335**	**0.1792**	**0.3125**	**1.4500e-003**	**0.1103**	**1.3700e-003**	**0.1116**	**0.0299**	**1.2900e-003**	**0.0312**	**0.0000**	**138.3192**	**138.3192**	**5.0900e-003**	**0.0129**	**142.2899**

3.5 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0103	0.1019	0.1458	2.3000e-004		5.1000e-003	5.1000e-003		4.6900e-003	4.6900e-003	0.0000	20.0269	20.0269	6.4800e-003	0.0000	20.1888
Paving	3.9300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0143**	**0.1019**	**0.1458**	**2.3000e-004**		**5.1000e-003**	**5.1000e-003**		**4.6900e-003**	**4.6900e-003**	**0.0000**	**20.0269**	**20.0269**	**6.4800e-003**	**0.0000**	**20.1888**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3000e-004	3.0000e-004	3.7300e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	0.9406	0.9406	3.0000e-005	3.0000e-005	0.9495
Total	**4.3000e-004**	**3.0000e-004**	**3.7300e-003**	**1.0000e-005**	**1.2100e-003**	**1.0000e-005**	**1.2200e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**0.9406**	**0.9406**	**3.0000e-005**	**3.0000e-005**	**0.9495**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0103	0.1019	0.1458	2.3000e-004		5.1000e-003	5.1000e-003		4.6900e-003	4.6900e-003	0.0000	20.0268	20.0268	6.4800e-003	0.0000	20.1888
Paving	3.9300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0143**	**0.1019**	**0.1458**	**2.3000e-004**		**5.1000e-003**	**5.1000e-003**		**4.6900e-003**	**4.6900e-003**	**0.0000**	**20.0268**	**20.0268**	**6.4800e-003**	**0.0000**	**20.1888**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3000e-004	3.0000e-004	3.7300e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	0.9406	0.9406	3.0000e-005	3.0000e-005	0.9495
Total	**4.3000e-004**	**3.0000e-004**	**3.7300e-003**	**1.0000e-005**	**1.2100e-003**	**1.0000e-005**	**1.2200e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**0.9406**	**0.9406**	**3.0000e-005**	**3.0000e-005**	**0.9495**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4101					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9200e-003	0.0130	0.0181	3.0000e-005		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	2.5533	2.5533	1.5000e-004	0.0000	2.5571
Total	**0.4121**	**0.0130**	**0.0181**	**3.0000e-005**		**7.1000e-004**	**7.1000e-004**		**7.1000e-004**	**7.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.5000e-004**	**0.0000**	**2.5571**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.1000e-004	3.6000e-004	4.4800e-003	1.0000e-005	1.4500e-003	1.0000e-005	1.4600e-003	3.9000e-004	1.0000e-005	3.9000e-004	0.0000	1.1287	1.1287	4.0000e-005	3.0000e-005	1.1394
Total	**5.1000e-004**	**3.6000e-004**	**4.4800e-003**	**1.0000e-005**	**1.4500e-003**	**1.0000e-005**	**1.4600e-003**	**3.9000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.1287**	**1.1287**	**4.0000e-005**	**3.0000e-005**	**1.1394**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4101					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9200e-003	0.0130	0.0181	3.0000e-005		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	2.5533	2.5533	1.5000e-004	0.0000	2.5571
Total	**0.4121**	**0.0130**	**0.0181**	**3.0000e-005**		**7.1000e-004**	**7.1000e-004**		**7.1000e-004**	**7.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.5000e-004**	**0.0000**	**2.5571**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.1000e-004	3.6000e-004	4.4800e-003	1.0000e-005	1.4500e-003	1.0000e-005	1.4600e-003	3.9000e-004	1.0000e-005	3.9000e-004	0.0000	1.1287	1.1287	4.0000e-005	3.0000e-005	1.1394
Total	**5.1000e-004**	**3.6000e-004**	**4.4800e-003**	**1.0000e-005**	**1.4500e-003**	**1.0000e-005**	**1.4600e-003**	**3.9000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.1287**	**1.1287**	**4.0000e-005**	**3.0000e-005**	**1.1394**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1104	0.1350	1.0300	2.0400e-003	0.2152	1.6500e-003	0.2169	0.0575	1.5400e-003	0.0590	0.0000	190.3575	190.3575	0.0133	9.1700e-003	193.4231
Unmitigated	0.1104	0.1350	1.0300	2.0400e-003	0.2152	1.6500e-003	0.2169	0.0575	1.5400e-003	0.0590	0.0000	190.3575	190.3575	0.0133	9.1700e-003	193.4231

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	58.00	58.00	58.00	138,606	138,606
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	148.24	148.24	148.24	432,793	432,793
Total	206.24	206.24	206.24	571,398	571,398

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.543528	0.058189	0.173108	0.133952	0.027894	0.007577	0.011427	0.006062	0.000688	0.000393	0.029232	0.000646	0.007304
Parking Lot	0.543528	0.058189	0.173108	0.133952	0.027894	0.007577	0.011427	0.006062	0.000688	0.000393	0.029232	0.000646	0.007304

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unrefrigerated Warehouse-No Rail	0.543528	0.058189	0.173108	0.133952	0.027894	0.007577	0.011427	0.006062	0.000688	0.000393	0.029232	0.000646	0.007304

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	76.2619	76.2619	6.4400e-003	7.8000e-004	76.6553
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	76.2619	76.2619	6.4400e-003	7.8000e-004	76.6553
NaturalGas Mitigated	1.8900e-003	0.0171	0.0144	1.0000e-004		1.3000e-003	1.3000e-003		1.3000e-003	1.3000e-003	0.0000	18.6561	18.6561	3.6000e-004	3.4000e-004	18.7669
NaturalGas Unmitigated	1.8900e-003	0.0171	0.0144	1.0000e-004		1.3000e-003	1.3000e-003		1.3000e-003	1.3000e-003	0.0000	18.6561	18.6561	3.6000e-004	3.4000e-004	18.7669

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	36200	2.0000e-004	1.7700e-003	1.4900e-003	1.0000e-005		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	1.9318	1.9318	4.0000e-005	4.0000e-005	1.9433
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	313402	1.6900e-003	0.0154	0.0129	9.0000e-005		1.1700e-003	1.1700e-003		1.1700e-003	1.1700e-003	0.0000	16.7243	16.7243	3.2000e-004	3.1000e-004	16.8237
Total		**1.8900e-003**	**0.0171**	**0.0144**	**1.0000e-004**		**1.3000e-003**	**1.3000e-003**		**1.3000e-003**	**1.3000e-003**	**0.0000**	**18.6561**	**18.6561**	**3.6000e-004**	**3.5000e-004**	**18.7669**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	36200	2.0000e-004	1.7700e-003	1.4900e-003	1.0000e-005		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	1.9318	1.9318	4.0000e-005	4.0000e-005	1.9433
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	313402	1.6900e-003	0.0154	0.0129	9.0000e-005		1.1700e-003	1.1700e-003		1.1700e-003	1.1700e-003	0.0000	16.7243	16.7243	3.2000e-004	3.1000e-004	16.8237
Total		**1.8900e-003**	**0.0171**	**0.0144**	**1.0000e-004**		**1.3000e-003**	**1.3000e-003**		**1.3000e-003**	**1.3000e-003**	**0.0000**	**18.6561**	**18.6561**	**3.6000e-004**	**3.5000e-004**	**18.7669**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	53960	9.5696	8.1000e-004	1.0000e-004	9.6189
Parking Lot	45738	8.1114	6.8000e-004	8.0000e-005	8.1533
Unrefrigerated Warehouse-No Rail	330321	58.5809	4.9400e-003	6.0000e-004	58.8831
Total		**76.2619**	**6.4300e-003**	**7.8000e-004**	**76.6553**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	53960	9.5696	8.1000e-004	1.0000e-004	9.6189
Parking Lot	45738	8.1114	6.8000e-004	8.0000e-005	8.1533
Unrefrigerated Warehouse-No Rail	330321	58.5809	4.9400e-003	6.0000e-004	58.8831
Total		**76.2619**	**6.4300e-003**	**7.8000e-004**	**76.6553**

6.0 Area Detail

6.1 Mitigation Measures Area

Pentair Warehouse Expansion - Ventura County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3798	1.0000e-005	8.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5600e-003	1.5600e-003	0.0000	0.0000	1.6700e-003
Unmitigated	0.3798	1.0000e-005	8.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5600e-003	1.5600e-003	0.0000	0.0000	1.6700e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0410					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3387					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	7.0000e-005	1.0000e-005	8.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5600e-003	1.5600e-003	0.0000	0.0000	1.6700e-003
Total	**0.3798**	**1.0000e-005**	**8.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.5600e-003**	**1.5600e-003**	**0.0000**	**0.0000**	**1.6700e-003**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0410					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3387					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	7.0000e-005	1.0000e-005	8.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5600e-003	1.5600e-003	0.0000	0.0000	1.6700e-003
Total	**0.3798**	**1.0000e-005**	**8.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.5600e-003**	**1.5600e-003**	**0.0000**	**0.0000**	**1.6700e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Use Water Efficient Irrigation System

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	43.6840	0.5352	0.0130	60.9247
Unmitigated	51.6617	0.6341	0.0154	72.0886

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	0.710935 / 0.435734	2.7258	0.0234	5.7000e-004	3.4808
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	18.6318 / 0	48.9359	0.6108	0.0148	68.6078
Total		**51.6617**	**0.6341**	**0.0154**	**72.0886**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	0.600029 / 0.409155	2.3821	0.0197	4.8000e-004	3.0198
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	15.7252 / 0	41.3019	0.5155	0.0125	57.9049
Total		**43.6840**	**0.5352**	**0.0130**	**60.9247**

8.0 Waste Detail

8.1 Mitigation Measures Waste

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	16.1297	0.9532	0.0000	39.9606
Unmitigated	16.1297	0.9532	0.0000	39.9606

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	3.72	0.7551	0.0446	0.0000	1.8708
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	75.74	15.3745	0.9086	0.0000	38.0898
Total		**16.1297**	**0.9532**	**0.0000**	**39.9606**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	3.72	0.7551	0.0446	0.0000	1.8708
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	75.74	15.3745	0.9086	0.0000	38.0898
Total		**16.1297**	**0.9532**	**0.0000**	**39.9606**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Forklifts	4	8.00	260	89	0.20	Electrical

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

UnMitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	tons/yr										MT/yr					
Forklifts	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

BBG



Third-party reports by a true third party

Phase I Environmental Site Assessment

DRAFT

Raw Land

California 118 - APN 511-0-200-265
Moorpark, California 93021

BBG Project: 0521011880

Prepared For
Amir Development Co.
8730 Wilshire Boulevard, Suite 300
Beverly Hills, California 90211

Report Date
November 12, 2021

Prepared By
BBG Assessments, LLC
Locations Nationwide

BBG Main Contact
Jeffery Smith | jsmith@bbgres.com | 303.420.1052 x3328
Mark Haskell | mhaskell@bbgres.com | 714.415.0151

Project Summary Table

BBG has prepared this Phase I ESA of the property located at California 118 - APN 511-0-200-265, Moorpark, California (the "Property") at the request of Amir Development Co.. The purpose of the ESA is to identify Recognized Environmental Conditions (RECs), Controlled Recognized Environmental Conditions (CRECs) and Historical Recognized Environmental Conditions (HRECs) and de minimis conditions as defined by ASTM E1527-13.

Report Section		NFA	REC	CREC	HREC	de minimis	BER	Comment
6.2	Environmental Records Summary	✔						
7.13	Historical Use Summary	✔						
8.3	Visual Observations Summary	✔						
9.1	Asbestos Containing Materials (ACM)	✔						
9.2	Radon	✔						
9.3	Lead-Based Paint (LBP)	✔						
9.4	Drinking Water	✔						
9.5	Microbial Growth	✔						
9.6	Flood Zone and Wetlands	✔						

DRAFT

BBG

November 12, 2021

Keenan Wolens
Amir Development Co.
8730 Wilshire Boulevard, Suite 300
Beverly Hills, California 90211

Re: Phase I Environmental Site Assessment of
Raw Land
California 118 - APN 511-0-200-265
Moorpark, California 93021
BBG Project: 0521011880

DRAFT

Dear Mr. Wolens:

BBG Assessments, LLC (BBG) has completed a Phase I Environmental Site Assessment (ESA) of the above referenced property in accordance with the ASTM International (ASTM) E1527-13 *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* and generally accepted industry standards.

This report was prepared solely for the use of Amir Development Co. (hereinafter referred to as "Client" or "User") and any party specifically referenced in Section 2.6 of this report. No other party shall have the right to rely on this report or the findings herein, without the prior written consent of BBG.

Please contact me at jsmith@bbgres.com or 303.420.1052 x3328 should you have any questions or require additional information. Thank you for the opportunity to be of service.

Sincerely,
BBG ASSESSMENTS, LLC

Signature for Jeffery Smith

Jeffery Smith
Managing Director

TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY 1

1.1 Property Description 1

1.2 Findings, Opinions and Conclusions 1

1.3 Recommendations 2

2.0 INTRODUCTION 3

2.1 Purpose 3

2.2 Scope of Work 4

2.3 Significant Assumptions 4

2.4 Limiting Conditions 4

2.5 Special Terms and Conditions 6

2.6 Reliance 6

3.0 PROPERTY DESCRIPTION 7

3.1 Property Details 7

3.2 Utility and Service Providers 7

3.3 Adjoining Properties 7

4.0 PHYSICAL SETTING 9

4.1 Topography 9

4.2 Surface Water Bodies 9

4.3 Geology and Hydrology 9

4.4 Minerals Exploration and Production 10

5.0 INTERVIEWS, RECORDS AND MUNICIPAL INFORMATION 11

5.1 User Provided Information 11

5.2 Owners, Operators and/or Neighboring Properties 12

5.3 Municipal/Government Agencies 13

6.0 ENVIRONMENTAL RECORDS 15

6.1 Environmental Records Sources 15

DRAFT

6.2 Environmental Records Summary 18

7.0 HISTORICAL USES 20

7.1 Aerial Photographs 20
7.2 Fire Insurance Maps 21
7.3 Property Tax Files 22
7.4 Recorded Land Title Records 22
7.5 Environmental Lien and Activity Use Limitations (AULs) 22
7.6 Historical USGS Topographic Maps 22
7.7 Local Street Directories 22
7.8 Building Department Records 23
7.9 Zoning/Land Use Records 23
7.10 Previous Assessment/Reports 23
7.11 Other Historical Sources 23
7.12 Data Failure 24
7.13 Historical Use Summary 24

8.0 PROPERTY RECONNAISSANCE AND INVESTIGATION 26

8.1 Methodology and Limiting Conditions 26
8.2 Visual Observations 26
8.3 Visual Observations Summary 27

9.0 ASTM NON-SCOPE CONSIDERATIONS 28

9.1 Asbestos Containing Materials (ACM) 28
9.2 Radon 28
9.3 Lead-Based Paint (LBP) 29
9.4 Drinking Water 29
9.5 Microbial Growth 29
9.6 Flood Zone and Wetlands 30
9.7 ASTM Non-Scope Consideration Summary 30

10.0 FINDINGS, OPINIONS, CONCLUSIONS AND RECOMMENDATIONS 31

DRAFT

10.1 Findings, Opinions and Conclusions 31
10.2 Recommendations 31

11.0 DEVIATIONS AND ADDITIONAL SERVICES 32
12.0 DECLARATION OF ENVIRONMENTAL PROFESSIONAL 33
13.0 DETAILED SCOPE OF WORK 34

APPENDIX 1 Property Maps
APPENDIX 2 Photographs
APPENDIX 3 Supporting Documentation
APPENDIX 4 Regulatory Database Report
APPENDIX 5 Historical Documentation
APPENDIX 6 Personnel Qualifications

DRAFT

1.0 EXECUTIVE SUMMARY

1.1 Property Description

The Property consists of an irregular-shaped parcel of land totaling 5.65 acres with no improvements. A concrete-lined flood control channel and water pipeline are located along the southern Property boundary, paralleling California 118 (Los Angeles Avenue). Railroad tracks parallel the northern Property boundary.

The Property was developed as a citrus orchard since the late 1930s until the late 1950s/ early 1960s when the orchard was removed. The Property has remained undeveloped.

A Property Location Map, Property Layout Map and photographs of the Property are appended to this report.

1.2 Findings, Opinions and Conclusions

BBG has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527 of California 118 - APN 511-0-200-265, Moorpark, California, the Property. Any exceptions to, or deletions from, this practice are described in Section 11 of this report. This assessment has revealed no evidence of RECs/ CRECs in connection with the Property.

This assessment has revealed no evidence of de minimis conditions.

The assessment has revealed no evidence of HRECs in connection with the Property.

No significant data gaps were identified that would affect the ability of the environmental professional to identify RECs at the Property.

This assessment has revealed no evidence of BERs associated with the standard ASTM scope considerations.

This assessment has revealed no evidence of BERs relating to ASTM non-scope considerations.

DRAFT

1.3 Recommendations

No further investigation or actions are recommended with respect to identifying RECs, based on the information available to BBG as of the date of this report.

DRAFT

2.0 INTRODUCTION

2.1 Purpose

The purpose of the ESA is to identify Recognized Environmental Conditions (RECs), Controlled Recognized Environmental Conditions (CRECs) and Historical Recognized Environmental Conditions (HRECs) and de minimis conditions as defined by ASTM E1527-13.

The term REC is defined as "the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment."

The term CREC is defined as "a recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls."

The term HREC is defined as "a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls."

The term de minimis condition is defined as "a condition that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be de minimis are not RECs or CRECs."

The term Business Environmental Risk (BER) is defined as a risk which can have a material environmental or environmentally-driven impact on the business associated with the current or planned use of a parcel of commercial real estate, not necessarily limited to those environmental issues required to be investigated as defined by ASTM.

DRAFT

2.2 Scope of Work

The ESA was conducted in accordance with ASTM E1527-13 *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (Standard Practice), the scope of work provided by the Client, and generally accepted industry standards, and is designed to meet the United States Environmental Protection Agency (USEPA) Standards and Practices for All Appropriate Inquiries (AAI) pursuant to 40 Code of Federal Regulations (CFR) Part 312.

Additionally, BBG addressed certain ASTM non-scope considerations. These non-scope considerations include asbestos-containing materials (ACM), radon, lead-based paint (LBP), microbial growth, drinking water quality, flood zones, and wetlands.

A more detailed scope of work is provided in Section 13.

2.3 Significant Assumptions

- BBG assumes the Property has been correctly identified by the User, designated representative of the User, property owner or operator, and/or the designated representative of the property owner or operator.

- BBG assumes that the User, designated representative of the User, property owner or operator, and/or the designated representative of the property owner or operator used good faith in answering questions about and providing information for the Property.

- BBG assumes the direction of groundwater is consistent with the contours depicted on the United States Geological Survey (USGS) topographic map covering the Property, unless otherwise specified by actual well data for the Property or properties in the area, or BBG's experience and knowledge of the area.

2.4 Limiting Conditions

- The scope of work completed was designed solely to meet the needs of BBG's Client. BBG shall not be liable for any unintended usage of this report by another party. Additionally, based on the ASTM Standard Practice, the ESA is only valid if completed within 180 days of an acquisition or the transaction necessitating the ESA, unless updated in accordance with terms outlined within the Standard Practice.

DRAFT

- No ESA can wholly eliminate uncertainty regarding the potential for RECs in connection with a property. This ESA was designed to reduce but not eliminate uncertainty regarding the existence of such conditions in a manner that recognizes reasonable limits of time and cost. BBG has completed this ESA in accordance with generally accepted consulting practices, and makes no other warranties, either expressed or implied, as to the character and nature of such services or product.

- An ESA is intended to be a non-intrusive investigation and generally does not include sampling or testing of air, soil, water, or building materials. No destructive testing was completed and concealed areas, such as behind walls or within machinery, were not accessed. Any testing, including that for ACM, LBP and radon, is designed solely to meet the needs of the Client, not to meet any local, state or federal regulations and should not be utilized as such. Any test results obtained are for the personal use of Client only and are not intended for submittal to any regulatory agency.

- Information needed to complete the ESA is based on personal interviews, government records, published resources, and various historical documents. Accuracy and completeness of information varies among information sources and is often inaccurate or incomplete. An environmental professional is not required by the ASTM Standard Practice to verify independently the information provided but may rely on information provided unless the environmental professional has actual knowledge that certain information is incorrect or unless it is obvious that certain information is incorrect based on other information obtained by or otherwise actually known to the environmental professional.

- BBG shall have no on-going obligation to obtain and include information that was not reasonably ascertainable, practically reviewable, or provided to BBG in a reasonable timeframe to formulate an opinion and complete the assessment by the agreed upon due date.

- An ESA includes some information that may be relevant to regulatory compliance, but is not intended and shall not be construed as a compliance audit and cannot be considered a verification of regulatory compliance. Depending on its past, present or future intended use, the property under review may or may not be subject to regulation and permitting under environmental and health and safety laws, such as, but not limited to,

DRAFT

the Clean Air Act, the Clean Water Act, the Solid Waste Disposal Act, the Occupational Safety and Health Act, and other federal, state and local regulations. BBG assumes no responsibility or liability respecting regulatory permitting or compliance issues.

2.5 Special Terms and Conditions

There are no special terms and conditions associated with this ESA.

2.6 Reliance

This investigation was conducted on behalf of and for the exclusive use of Amir Development Co. (Client). This report, and the findings contained herein, shall not, in whole or part, be disseminated or conveyed to or used by any other party without the prior written consent of BBG. Any unauthorized party using or relying upon the Report shall be liable to BBG for equitable compensation and appropriate punitive damages, and shall be responsible to reimburse BBG for and indemnify, defend and hold BBG harmless from and against any and all costs, claims, liabilities, expenses, lost profits and damages arising as a direct or indirect result of such unauthorized use or reliance.

DRAFT

3.0 PROPERTY DESCRIPTION

3.1 Property Details

Property Size	5.65 acres
Property Size Source	Ventura County Assessor
Parcel ID Number(s)	511-0-200-265
Parcel ID Source	Ventura County Assessor
Property Usage	Vacant Land
Number of Buildings	None
Legal Description	The legal description is included in Appendix 3.
Tenants	None

3.2 Utility and Service Providers

Electricity	Southern California Edison
Natural Gas	The Gas Company
Potable Water	Ventura County Water District
Sanitary Sewer	Ventura County Water District
Stormwater	City of Moorpark

3.3 Adjoining Properties

The ASTM Standard Practice defines adjoining properties as "any real property or properties the border of which is contiguous or partially contiguous with that of the property, or that would be contiguous or partially contiguous with that of the property but for a street, road, or other public thoroughfare separating them." The following adjoining properties were noted.

Direction	Description
North	Railroad tracks, followed by agricultural land (orchards)
East	Undeveloped land
South	Los Angeles Avenue followed by Muranaka Farms (11018 East Los Angeles Avenue)

DRAFT

Direction	Description
West	Pentair Water Pool and Spa, Inc. (10951 Los Angeles Avenue)

BBG's observations of the adjoining properties did not identify evidence that would indicate the potential presence of a REC, such as fueling facilities, dry cleaning operations, improperly stored or leaking drums, or significantly stained surfaces.

DRAFT

4.0 PHYSICAL SETTING

Information regarding topography, geology and hydrology are used to evaluate the likelihood of hazardous substances and petroleum products to migrate onto, within or from the Property. BBG attempted to determine the general physical setting of the Property using one or more of the physical setting sources outlined in Section 8.2.4 of the ASTM Standard Practice.

4.1 Topography

Property Elevation	Approximately 450 feet above mean sea level (MSL)
Topography	The Property is relatively flat, with a slight gradient to the southwest. The areas surrounding the Property slope to the southwest
Source	Property elevation and topography are based on observations made during BBG's November 5, 2021 site visit and upon review of the applicable United States Geological Survey (USGS) topographic map. The relevant portion of the topographic map is appended to this report.

4.2 Surface Water Bodies

On-Site Water Bodies	There are no surface water bodies on or bordering the Property. A drainage channel is located along the south side of the Property, along West Los Angeles Avenue.
Nearest Surface Water Body	The nearest off-site surface water body is Arroyo Simi, located approximately 0.63 mile south of the Property.

4.3 Geology and Hydrology

Geology and Soils	The Property lies within the Coastal Basin aquifer system. The California coastal region has been subjected to intense tectonic forces for millions of years. Folding, faulting of marine sediments, and associated volcanism resulted in the formation of the Klamath and the Salmon Mountains in northern California and the Coast Ranges that extend along most of the California coast. Terrestrial, marine, and volcanic rocks deposited in intermountain valleys compose the aquifers herein called the Coastal Basins aquifers. The California Department of Water Resources considers more than 100

DRAFT

	coastal basins to be "significant" because of the amount of ground water potentially obtainable or the scarcity of surface-water sources in a basin. Nearly all of the large population centers in California are located in the coastal basins. The Property is underlain by Metz loamy sand (MeC, 2 to 9 percent slopes), Pico sandy loam (PcA, 0 to 2 percent slopes) and Sandy alluvial fan (Sd) per the USDA NRCS Web Soil Survey.
Source	USGS Geologic Map of CA NRCS Soil Survey of Moorpark, CA USDA Web Soil Survey
Depth to Groundwater	Approximately Between 30 and 50 feet below ground surface
Anticipated Flow Direction	Southwest
Basis of Flow Direction	The USEPA *Ground Water Handbook, Vol.1 Ground Water and Contamination*, September 1990, states that the water table typically conforms to surface topography. This means the direction of flow for shallow groundwater is generally from higher elevations to lower elevations. Localized flow direction may vary as a result of tide, rainfall, development, geologic characteristics, nearby surface water bodies, underground utilities such as storm drains, septic systems and sewers, or other influences such as the presence of high-volume wells.

4.4 Minerals Exploration and Production

Oil and Gas Wells	No oil or gas wells or oil and gas production equipment were observed at the Property. No wells were depicted on the USGS Topographic Map. According to the California Geologic Energy Management Division (CalGEM), there are no oil/gas wells on the Property or in the immediate vicinity of the Property.
Pipelines	No petroleum pipelines were observed on or adjoining the Property. No pipelines were depicted on the USGS Topographic Map. According to the National Pipeline Mapping System, there are no pipelines on the Property.
Mining Activities	No mining activities were observed on or adjoining the Property. No mining activities were depicted on the USGS topographic map.

DRAFT

5.1 User Provided Information

User provided information is intended to help identify the possibility of RECs in connection with the Property. According to the ASTM Standard Practice and EPA's AAI Rule, the following items should be researched by the prospective landowner or grantee, and the results of such inquiries may be provided to the environmental professional. The responsibility for qualifying for Landowner Liability Protections (LLPs) by conducting the following inquiries ultimately rests with the User, and providing the following information to the environmental professional would be prudent if such information is available. The AAI rule does not require submission of this information to the environmental professional.

DRAFT

User Provided Information	User Provided	Issue Identified	Comments
Recorded Land Title Records	No	N/A	User did not provide BBG the results of a search of recorded land title records for the purpose of identifying environmental liens filed or recorded against the Property or activity and use limitations (AULs) in place at the Property under federal, tribal, state or local law.
Specialized or Actual Knowledge or Experience	No	N/A	User did not inform BBG of specialized knowledge of conditions indicative of releases or threatened releases at the Subject Property or at adjoining properties which could impact the Subject Property. User did not inform BBG of actual knowledge of environmental liens or AULs encumbering the Subject Property or in connection with the Subject Property.
Significantly Lower Purchase Price	No	N/A	User did not provide information to BBG indicating the purchase price of the Subject Property was below the fair market price for a comparable property,

User Provided Information	User Provided	Issue Identified	Comments
			or that any difference in price was likely the result of the presence of hazardous substances or petroleum products.
Commonly Known or Reasonably Ascertainable Information	No	N/A	User did not inform BBG of any commonly known or reasonably ascertainable information within the local community about the Subject Property.
Degree of Obviousness	No	N/A	User did not indicate any reason to suspect or have knowledge of the obvious presence or likely presence of releases or threatened releases at the Subject Property.
Reason for Performing the Phase I ESA	Yes	No	User indicated the reason for conducting the ESA was to assist the User in pre-development due diligence, and not to qualify for a landowner liability protection (LLP) to CERCLA liability.

5.2 Owners, Operators and/or Neighboring Properties

Key Site Manager

Key Site Manager	Blair Lilek
Telephone/Email	(310) 657-8987
Pertinent Information	Mr. Blair Lilek stated that he had no records or recollection of any releases, likely releases or imminent threat of releases of hazardous substances or petroleum products at the Property. Mr. Lilek was not aware of environmental liens filed against the Property or any AULs filed or recorded against the Property, or any past, threatened or pending lawsuits or administrative proceedings related to environmental issues. Mr. Lilek was not aware of underground storage tanks (USTs) or aboveground storage tanks (ASTs) on the Property, or of any concerns relating to water infiltration or microbial growth.

DRAFT

5.3 Municipal/Government Agencies

Department Name	Ventura County Fire Department
Contact	Online
Telephone/Email/Website	http://157.145.215.177:2115/PublicRecordRequest.aspx
Pertinent Information	BBG facilitated a Freedom of Information Act (FOIA) request for fire department files pertaining to USTs, ASTs, reported incidents of hazardous material releases, or other similar circumstances that could be of environmental concern at the Property. A response has not been received as of the date of this report. Based on the other information obtained during this assessment, the lack of a response is not considered significant in the identification of RECs associated with the Property.

Department Name	Moorpark Building Department
Contact	Administrative Assistant
Telephone/Email/Website	(805) 517-6200
Pertinent Information	BBG contacted the Moorpark Building and Safety Division to obtain certificates of occupancy, permits for the installation or removal of tanks, or other similar circumstances that could be of environmental concern at the Property. No records pertaining to the Property were identified.

Department Name	Ventura County Environmental Health Division
Contact	Online Database
Telephone/Email/Website	https://vcrma.org/online-records
Pertinent Information	BBG contacted the environmental health department to obtain information pertaining to USTs, ASTs, reported incidents of hazardous material releases, or other similar circumstances that could be of environmental concern at the Property. No records regarding hazardous substance use, storage or releases, or the presence of USTs and AULs on the Property were on file with the CVEHD.

Department Name	Ventura County Air Pollution Control District (VCAPCD)

DRAFT

Contact	Online Database
Telephone/Email/Website	http://www.vcapcd.org/FIS.htm
Pertinent Information	BBG visited the Ventura County Air Pollution Control District (VCAPCD) website for information indicating current and/or historical hazardous materials usage, storage or releases, as well as the presence of USTs. No Permits to Operate (PTO), Notices of Violation (NOV), or Notices to Comply (NTC) or the presence of AULs, dry cleaning machines, or USTs were on file for the Property with the VCAPCD.

Department Name	State Water Resources Control Board (SWRCB)
Contact	Online Database
Telephone/Email/Website	http://geotracker.waterboards.ca.gov/
Pertinent Information	BBG visited the SWRCB's GeoTracker for information on the Property and/or nearby sites of concern to identify any evidence of unauthorized releases of hazardous materials to the groundwater. Cases typically handled by the SWRCB include releases from USTs. The Property was not identified on the SWRCB GeoTracker website.

Department Name	California Department of Toxic Substances Control (DTSC)
Contact	Online Database
Telephone/Email/Website	https://www.envirostor.dtsc.ca.gov/public/ https://hwts.dtsc.ca.gov/report_search.cfm?id=5
Pertinent Information	BBG visited the DTSC's Envirostor and HWTS for information on the Property and/or nearby sites of concern to identify any evidence of unauthorized releases of hazardous materials to the groundwater. The Property was not identified on the DTSC Envirostor and HWTS websites.

DRAFT

6.0 ENVIRONMENTAL RECORDS

BBG obtained a commercially-available regulatory records database report containing the standard environmental record sources identified in ASTM 1527-13 as well as any additional environmental record source determined to be: 1) reasonably ascertainable; 2) sufficiently useful, accurate and complete; and 3) generally obtained, pursuant to local good commercial or customary practice in initial ESAs in the type of commercial real estate transaction involved. A detailed description of the records reviewed and a listing of all of the identified sites are appended to this report. Accuracy and completeness of record information varies among information sources and is often inaccurate or incomplete. BBG cannot warrant the accuracy of the information, but has made reasonable efforts to compensate for mistakes or insufficiencies in the information reviewed that are obvious in light of other information of which BBG has actual knowledge. BBG reviewed the environmental record sources to identify sites involved in the storage, use, generation, disposal, or release of petroleum products and/or hazardous substance and has evaluated the potential for releases at the Property or the migration of contaminants onto the Property from off-site sources via soil, groundwater, or vapor. The potential for a vapor encroachment condition (VEC) will be evaluated following ASTM E2600-15 Standard guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions.

6.1 Environmental Records Sources

Environmental Record Sources	Approximate Minimum Search Distance	Property Listings	Off-Site Properties
Federal NPL	1.0 mile	No	No
Federal Delisted NPL	0.5 mile	No	No
Federal SEMS/CERCLIS	0.5 mile	No	No
Federal SEMS Archive/CERCLIS NFRAP	0.5 mile	No	No
Federal RCRA CORRACTS	1.0 mile	No	No
Federal RCRA TSD	0.5 mile	No	No
Federal RCRA generators	Property and adjoining	No	Yes
Federal institutional/engineering controls	Property only	No	Not Applicable

DRAFT

Environmental Record Sources	Approximate Minimum Search Distance	Property Listings	Off-Site Properties
Federal ERNS	Property only	No	Not Applicable
State and tribal-equivalent NPL	1.0 mile	No	No
State and tribal-equivalent CERCLIS	0.5 mile	No	Yes
State and tribal landfill and solid waste	0.5 mile	No	Yes
State and tribal leaking storage tanks	0.5 mile	No	No
State and tribal registered storage tanks	Property and adjoining	No	Yes
State and tribal institutional/engineering controls	Property only	No	Not Applicable
State and tribal voluntary cleanup	0.5 mile	No	No
State and tribal Brownfield	0.5 mile	No	No
Additional environmental record sources	Various	No	Yes
EDR exclusive records	Various	No	No

Anticipated groundwater flow direction: Southwest

The groundwater flow direction is used to determine whether sites are located up-, cross- or down-gradient of the Property, which provides an indication of their potential to impact the Property.

Property

The Property was not identified on the environmental record sources reviewed.

Adjoining Properties

The following adjoining properties were noted:

- The site located at 10951 West Los Angeles Avenue was identified to the west under the name Pentair Water Pool and Spa Inc. The facility is listed on the California Environmental Reporting System (CERS), CERS HAZ WASTE, CERS Tanks, NPDES,

DRAFT

CIWQS and Resource Conservation and Recovery Act Large Quantity Generator (RCRA-LQG) databases. According to RCRA LQG listing, Pentair Water Pool and Spa Inc. generated regulated hazardous wastes in 2020. No violations of hazardous waste regulations are identified in the RCRA record. According to CERS, CERS HAZ WASTE and CERS Tanks listings, Pentair Water Pool and Spa Inc. was issued a permit to store hazardous materials, generate hazardous waste and operate aboveground storage tanks. Violations were issued to Pentair Water Pool and Spa Inc. in 2013, 2015, 2017 and 2019, which were subsequently corrected. No additional information was provided in the database report. In addition, this site is not listed on any regulatory release database that would detail potential impacts the subject property. Based on the lack of a documented release, this facility is not considered a REC in connection with the Property.

- The site located at 10951 Los Angeles Avenue was identified to the west across under the name Quijada Trucking. This site was listed on the RCRA NonGen database. RCRA-NonGen sites are facilities that no longer generate hazardous wastes. No violations are noted for the facility. No visual indications of concern were noted during the reconnaissance. Based on the lack of noted violations or enforcement actions, lack of visual indication of concern noted during the reconnaissance and the fact the facility is not listed on a database of sites with suspected or confirmed releases, this facility is not considered a REC in connection with the Property.

- The site located at 10951 West Los Angeles Avenue was identified to the west under the name KDI American Products. The facility is listed on the Resource Conservation and Recovery Act Small Quantity Generator (RCRA-SQG) database. According to the database report, KDI American Products generated regulated hazardous wastes in 1996. Violations were issued to KDI American Products in 1992 and 1993, which were subsequently corrected. No additional information was provided in the database report. In addition, this site is not listed on any regulatory release database that would detail potential impacts the subject property. Based on the lack of a documented release, this facility is not considered a REC in connection with the Property.

- The site located at 11015 West Los Angeles Avenue was identified to the north under the name J.D. McGrath Farms and M&C. The facility is listed on the HIST UST, HAZNET, HWTS databases. According to HAZNET and HWTS listings, M&C generated regulated hazardous wastes in 2003. No violations were reported. According to HIST

DRAFT

UST listing, this site was formerly occupied by a 550-gallon gasoline UST. No additional information was provided in the database report. In addition, this site is not listed on any regulatory release database that would detail potential impacts the subject property. Based on the lack of a documented release, this facility is not considered a REC in connection with the Property.

- The site located at 11018 and 11128 West Los Angeles Avenue was identified to the south under the name Muranaka Farm. The facility is listed on the AST, CERS, CERS HAZ WASTE, CERS Tanks, Ventura Co. BWT, NPDES, WDR, CIWQS, RCRA NonGen, RCRA SQG, FINDS and ECHO databases. According to RCRA NonGen and RCRA SQG listings, Muranaka Farm generated regulated hazardous wastes in 1991 and 2019. No violations of hazardous waste regulations are identified in the RCRA record. According to CERS, CERS HAZ WASTE, CERS Tanks and Ventura Co. BWT listings, Muranaka Farm was issued a permit to store hazardous, generate hazardous wastes and operate aboveground storage tanks. Violations were issued to Muranaka Farm in 2017, which were subsequently corrected. No additional information was provided in the database report. In addition, this site is not listed on any regulatory release database that would detail potential impacts the subject property. Based on the lack of a documented release, this facility is not considered a REC in connection with the Property.

Other Properties Warranting Discussion

While the regulatory records database report provided a list of identified sites using the radii established by the ASTM Standard, most sites do not pose a concern due to distance, groundwater gradient, nature of the listing, information provided in the database or a combination thereof. BBG reviewed the listed sites and determined no sites of concern were noted.

6.2 Environmental Records Summary

BBG did not identify environmental records for the Property that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the Property or into the ground, ground water, or surface water of the Property that would be considered a REC in connection with the Property.

DRAFT

BBG did not identify environmental records indicating a release of hazardous substances or petroleum products from neighboring properties likely to migrate onto the Property via soil, groundwater or vapor pathways that would be considered a REC or a VEC in connection with the Property.

DRAFT

7.0 HISTORICAL USES

BBG attempted to develop a history of the previous uses of the Property and surrounding area in order to help identify the likelihood of past uses having led to RECs in connection with the Property. Efforts were made to identify the uses of the Property back to the Property's first use, or back to 1940, whichever is earlier. BBG relied upon the standard historical sources listed in Section 8.3.4 of the ASTM Standard Practice. Only the sources deemed both reasonably ascertainable and likely to be useful were used.

Historical Resources Reviewed		
Historical Resource	**Years Reviewed**	**Report Section**
Aerial Photographs	1928 - 2014	Section 7.1
Fire Insurance Maps	No Coverage	Section 7.2
Property Tax Files	2021	Section 7.3
Recorded Land Title Records	Not Provided	Section 7.4
Historical USGS Topographic Maps	Not Researched	Section 7.5
Local Street Directories	1920-2017	Section 7.6
Building Department Records	Not Available	Section 7.7
Zoning/Land Use Records	2020	Section 7.8
Previous Assessment/ Reports	2018	Section 7.9
Other Historical Sources	Not Researched	Section 7.10

7.1 Aerial Photographs

Year(s)	Property Description	Adjoining Property Description
1927 1938 1947 1952	Agricultrual/Ochards	**North**: Railroad tracks, followed by agricultural land and orchards **East**: Orchards **South**: Los Angeles Avenue, followed by a rural residence and agricultural land **West**: Orchards

DRAFT

Year(s)	Property Description	Adjoining Property Description
1959 1969	Agricultural (former orchard)	**North**: Railroad tracks, followed by agricultural land and orchards **East**: Agricultural (former orchard) **South**: Los Angeles Avenue, followed by a rural residence and agricultural land **West**: Agricultural (former orchard)
1978	Undeveloped (former orchard)	**North**: Railroad tracks, followed by agricultural land and orchards **East**: Undeveloped (former orchard) **South**: Los Angeles Avenue, followed by an agricultural land and a storage yard **West**: Undeveloped (former orchard)
1985	Undeveloped (former orchard)	**North**: Railroad tracks, followed by agricultural land and orchards **East**: Undeveloped (former orchard) **South**: Los Angeles Avenue, followed by an agricultural land and an industrial facility **West**: Undeveloped (former orchard)
1994	Undeveloped (former orchard)	**North**: Railroad tracks, followed by agricultural land and orchards **East**: Undeveloped (former orchard) **South**: Los Angeles Avenue, followed by an agricultural land and an industrial facility **West**: Industrial
2005 2010 2014	Undeveloped	**North**: Railroad tracks, followed by agricultural land and orchards **East**: Undeveloped **South**: Los Angeles Avenue, followed by an agricultural land and an industrial facility **West**: Industrial

DRAFT

7.2 Fire Insurance Maps

7.3 Property Tax Files

Tax files are files kept for property tax purposes by the local jurisdiction where the property is located and may include records of past ownership, appraisals, maps, sketches, and photographs. BBG reviewed the property tax files for the Property available online from the Ventura County Assessor. The website included general property information such as property size, building size and date of construction, which has been incorporated into the applicable sections on this report. No significant historical use information was provided. No indications of environmental concern were noted.

7.4 Recorded Land Title Records

Land title records are records of historical fee ownership, which may include leases, land contracts and AULs on or of the property recorded in the place where land title records are, by law or custom, recorded for the local jurisdiction in which the property is located, often such records are kept by a municipal or county recorder or clerk. Such records may be obtained from title companies or directly from the local government agency. A chain-of-title was not provided to BBG for review.

7.5 Environmental Lien and Activity Use Limitations (AULs)

A review of available records and regulatory information cited in Section 6.0 did not identify environmental liens or AULs associated with the Property.

7.6 Historical USGS Topographic Maps

Historical topographic maps can indicate whether an area is undeveloped, lightly developed or heavily developed and can also indicate if roads, railroad tracks, quarrying operations or water bodies were previously or near a property. No historical topographic maps were reviewed as part of this assessment due to the sufficient prior use history obtained through the other standard historical sources.

7.7 Local Street Directories

Local street directories identify the name of the individual or company located at a given address. BBG attempted to access local street directories at the Moorpark City Library. No local street directories were available.

DRAFT

7.8 Building Department Records

Building department records generally consist of local government records indicating permission of the local government to construct, alter, or demolish improvements on the property. Often building department records are located in the building department of a municipality or county. No records for the Property were identified from the Moorpark Building and Safety Division.

7.9 Zoning/Land Use Records

Zoning or land use records generally consist of local government records indicating the uses permitted by the local government in particular zones within its jurisdiction. The records may consist of maps and/or written records. The records are often located in the planning department of a municipality or county. BBG reviewed zoning/land use records for the Property. The Property is zoned M-2.

7.10 Previous Assessment/Reports

BBG reviewed the following report summarized below:

Title	Phase I Environmental Site Assessment
Prepared by	BBG Assessment
Date	May 15, 2018

The 2018 ESA was prepared in general accordance with ASTM E1527-13. According to the report, the Property was developed as a citrus orchard since the late 1930s until the late 1950s/early 1960s when the orchard was removed. The Property remained undeveloped. At the time of site reconnaissance, the Property was undeveloped land. No current or former ASTs or USTs were identified on the Property. No hazardous substances were identified at the Property. The Property was not identified on any regulatory databases. In addition, no offsite facilities of concerns were identified. Based on these findings, BBG recommended no further action.

7.11 Other Historical Sources

Other historical sources include sources that are credible to a reasonable person and that identify past uses of the Property. This category includes, but is not limited to: miscellaneous maps, newspaper archives, internet sites, community organizations, local

DRAFT

libraries, historical societies, current owners or occupants of neighboring properties, or records in the files and/or personal knowledge of the property owner and/or occupants. BBG did not review other historical sources for the Property based on prior use history obtained through the other standard historical sources.

7.12 Data Failure

Based on the information above, it is BBG's opinion that the following data failures, as defined in Section 8.3.2.3 of the ASTM guidelines, have occurred in attempting to document the historical uses of the Property:

- BBG was unable to document the historical uses of the Property back to 1940; however, given that the Property was used agriculturally as of the earliest source obtained, this data failure is not considered a significant data gap.

- Some of the intervals between documented sources exceeded five years; however, based on the similar usage during the periods documented, this data failure is not considered a significant data gap.

Neither of the data failures affected the ability of the Environmental Professionals involved in this assessment to identify RECs in connection with the Property; therefore, they are not considered significant data gaps.

7.13 Historical Use Summary

The Property was developed as a citrus orchard since the late 1930s until the late 1950s/ early 1960s when the orchard was removed. The Property has remained undeveloped.

The surrounding properties have been mainly agricultural land and orchards since the late 1930s. The west adjoining industrial facility was developed in the mid-late 1980s.

The Property has a history of use as citrus orchard. A wide variety of pesticides, including those containing persistent compounds such as lead, arsenic and DDT, along with related organochlorine and organophosphate pesticides, may have been used during this period. No information was obtained indicating evidence of improper storage, disposal or application of these materials and a review of available aerial photographs did not show improvements such as garages or barns that would indicate significant storage, formulation and handling of these materials. Based on the lack of observed structures or storage areas,

DRAFT

it is BBG's professional opinion, that while detectable levels of the persistent compounds associated with the historical use of the orchard may still be present, the historical agricultural usage is not considered a REC.

Railroad tracks have historically been located adjacent to the north of the Property and are surrounded by gravel. Based on the presence of gravel, the use of oils, arsenic, and herbicides associated with weed or pest control is expected to be minimal, and therefore does not represent a significant environmental concern.

No prior usage of the Property or adjoining properties was identified that would be considered a REC for the Property.

DRAFT

8.0 PROPERTY RECONNAISSANCE AND INVESTIGATION

8.1 Methodology and Limiting Conditions

Assessor	Nasim Ahmed, Professional Associate
Date of Reconnaissance	November 5, 2021
Weather Conditions	Sunny with temperatures around 75 degrees Fahrenheit
Property Escort	Blair Lilek
Methodology	The property reconnaissance consisted of visual observations of the Subject Property, adjoining properties, as viewed from the Subject Property boundaries, and the surrounding area based on visual observations made from adjacent public thoroughfares.
Areas Accessed	BBG accessed the entire site
Inaccessible Areas	No areas were inaccessible during the assessment.
Other Limitations	No other significant limitations or physical obstructions were encountered during the Subject Property reconnaissance.

8.2 Visual Observations

Observation	Yes	No
Hazardous Substance and Petroleum Products in Connection with Identified Uses		✔
Hazardous Substance and Petroleum Products in Connection with Unidentified Uses		✔
Drums and Containers of Unidentified Substance or Petroleum Products		✔
Aboveground and Underground Storage Tanks		✔
Strong, Pungent or Noxious Odors		✔
Pools of Liquids		✔
Electrical or Hydraulic Equipment likely to Contain Fluids		✔
Heating and Cooling Source		✔
Interior Stains or Corrosion other than from Water		✔
Floor Drains, Sumps, Clarifiers and Oil/Water Separators		✔
Pits, Ponds and Lagoons		✔

DRAFT

Observation	Yes	No
Exterior Stained Soils or Pavement		✔
Stressed Vegetation		✔
Onsite Solid Waste Disposal or Unknown Fill		✔
Wastewater		✔
Wells	✔	
Septic Systems and Cesspools		✔
Other		✔

Wells

An abandoned pipe, approximately 6 inches in diameter and extending approximately 12-16 inches from the ground, was observed on the southwestern portion of the Property. The purpose of this pipe is unknown; however, is suspected to be a former irrigation well or similar irrigation distribution pipe. If the pipe is determined to be a irrigation water well and the well is no longer used, the potential well should be abandoned in accordance with California Department of Water Resources and Los Angeles County and City of Moorpark regulations.

8.3 Visual Observations Summary

No visual, olfactory or other observations were made during the property reconnaissance that would indicate a REC in connection with the Property.

DRAFT

9.0 ASTM NON-SCOPE CONSIDERATIONS

9.1 Asbestos Containing Materials (ACM)

Asbestos is a mineral fiber that has been used commonly in a variety of building construction materials for insulation and as a fire-retardant. Because of its fiber strength and heat resistant properties, asbestos was used in roofing shingles, ceiling and floor tiles, insulation products, asbestos cement products, and a host of other building materials. ACM is often classified as either friable or non-friable. Friable ACM, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Non-friable ACM can be crumbled, pulverized, or reduced to powder during machining, cutting, drilling, or other abrasive procedures. When asbestos-containing materials are damaged or disturbed by repair, remodeling or demolition activities, microscopic fibers become airborne and can be inhaled into the lungs, where they can cause significant health problems. Friable ACM is more likely to release fibers when disturbed or damaged than non-friable ACM.

No buildings are present on the Property; therefore, ACM is not considered a concern.

9.2 Radon

Radon is a naturally occurring colorless, odorless gas that is a by-product of the decay of radioactive materials potentially present in bedrock and soil. The USEPA guidance action level for annual residential exposure to radon is 4.0 picoCuries per liter of air (pCi/L). The guidance action level is not a regulatory requirement for private owners of commercial real estate, but is commonly used for comparison purposes to suggest whether further action at a building may be prudent.

A preliminary evaluation of the potential for concerns relating to radon was made using the USEPA Map of Radon Zones. The USEPA Map is based solely on averages in order to identify areas in the country with the potential for elevated indoor radon levels. Elevated levels of radon have been found in all radon zones. A finding that a property is located in a zone with predicted levels of radon below the USEPA action level does not mean a specific property does not have elevated levels of radon. The evaluation considered the location of the Property, previous test results, if available, type of construction and usage of the Property.

DRAFT

The Property is in Zone 1, counties which have a predicted average indoor radon screening level greater than the USEPA action level of 4.0 pCi/L. The Property is not used residentially. The USEPA action level applies only to residential properties and not to commercial properties.

No buildings are present on the Property; therefore, radon is not considered a BER.

9.3 Lead-Based Paint (LBP)

Lead was added to paint as a pigment, to speed drying, increase durability or to resist moisture. Although lead improves paint, it was found to pose a health hazard, particularly to children under the age of six, whose bodies are still developing. A paint is considered LBP if it contains lead equal to or exceeding 1.0 milligram per square centimeter or 0.5 percent by weight, or 5,000 parts per million (ppm) by weight.

No buildings are present on the Property; therefore, LBP is not considered a BER in connection with the Property.

9.4 Drinking Water

The potential for concerns relating to elevated levels of contaminants, particularly lead, was evaluated. The evaluation looked at the source of drinking water and analytical data, if available.

The Property is currently undeveloped; therefore, drinking water is not a concern. Once the Property is developed it will receive its drinking water from Ventura County Water Works. Per the most recent Annual Water Quality Report, the water that will be supplied meets or exceeds the federal and state drinking water standards, including those for lead; therefore, drinking water quality is not considered a BER.

9.5 Microbial Growth

Molds are usually not a problem indoors, unless mold spores land on a wet or damp spot and begin growing. Molds have the potential to cause health problems. Molds produce allergens (substances that can cause allergic reactions), irritants, and in some cases, potentially toxic substances (mycotoxins). Inhaling or touching mold or mold spores may cause allergic reactions in sensitive individuals. Allergic responses include hay fever-type symptoms, such as sneezing, runny nose, red eyes, and skin rash (dermatitis). Allergic reactions to mold are common. They can be immediate or delayed. Molds can also cause asthma attacks in

DRAFT

people with asthma who are allergic to mold. In addition, mold exposure can irritate the eyes, skin, nose, throat, and lungs of both mold-allergic and non-allergic people. Symptoms other than the allergic and irritant types are not commonly reported as a result of inhaling mold. Research on mold and health effects is ongoing.

No buildings are present on the Property; therefore, microbial growth is not considered a BER in connection with the Property.

9.6 Flood Zone and Wetlands

BBG attempted to determine if the Property was located in a flood hazard area or contained jurisdictional wetlands. This screening was based solely on a review of available FEMA Flood Insurance Rate Maps (FIRM) and the United States Fish and Wildlife Service National Wetlands Inventory (NWI) website. This screening should not be considered a formal flood hazard determination or wetlands delineation.

Based on information provided by FEMA, the Property is located in Zone X Unshaded, defined as areas of minimal flood hazard and Zone X Shaded, defined as areas of moderate flood hazard, usually the area between the limits of the 100-year and 500-year floods, or areas protected by levees from 100-year flood, or shallow flooding areas with average depths of less than one foot or drainage areas less than 1 square mile.

No federally regulated wetlands are located on the Property, based on the United States Fish & Wildlife Service National Wetlands Inventory website.

9.7 ASTM Non-Scope Consideration Summary

BBG did not identify any BERs associated with the ASTM non-scope considerations included in this assessment.

DRAFT

10.0 FINDINGS, OPINIONS, CONCLUSIONS AND RECOMMENDATIONS

10.1 Findings, Opinions and Conclusions

BBG has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527 of California 118 - APN 511-0-200-265, Moorpark, California, the Property. Any exceptions to, or deletions from, this practice are described in Section 11 of this report. This assessment has revealed no evidence of RECs/ CRECs in connection with the Property.

This assessment has revealed no evidence of de minimis conditions.

The assessment has revealed no evidence of HRECs in connection with the Property.

No significant data gaps were identified that would affect the ability of the environmental professional to identify RECs at the Property.

This assessment has revealed no evidence of BERs associated with the standard ASTM scope considerations.

This assessment has revealed no evidence of BERs relating to ASTM non-scope considerations.

10.2 Recommendations

No further investigation or actions are recommended with respect to identifying RECs, based on the information available to BBG as of the date of this report.

DRAFT

11.0 DEVIATIONS AND ADDITIONAL SERVICES

The following items deviated from the ASTM 1527-13 Standard:

- The Standard offers a "Recommended Table of Contents and Report Format." While BBG's report includes all of the information required by the Standard, BBG did not follow the recommend table of contents and report format for all sections of the report.

- The Standard only requires that the preparer of the report determine the presence of RECs, CRECs and HRECs, if any, or data gaps that prevent a conclusion regarding the presence of RECs, CRECs and HRECs being made. At the request of Client, BBG has included recommendations in this report.

- At the request of Client asbestos-containing materials, radon, lead-based paint, drinking water quality, and mold were addressed in this ESA. These are considered Non-Scope Considerations by the Standard.

- At the request of Client, a preliminary evaluation was made to determine if the Property was located in a flood plain or if portions of the Property could be classified as wetlands. These are considered Non-Scope Considerations by the Standard.

- The results of additional inquiries required under section 312.22 of 40 CFR 312 and Section 6 of the ASTM Standard were not provided to BBG. All appropriate inquiry does not require submission of this information to the environmental professional.

DRAFT

12.0 DECLARATION OF ENVIRONMENTAL PROFESSIONAL

We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professional as defined in §312.10 of 40 CFR 312.

We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the Property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Prepared By:

Signature for Nasim Ahmed
Nasim Ahmed
Professional Associate, EP

Reviewed By:

Signature for Tessa Barth
Tessa Barth
Director, EP

Client Manager:

Signature for Jeffery Smith

Jeffery Smith
Managing Director

DRAFT

13.0 DETAILED SCOPE OF WORK

This ESA was conducted in accordance with ASTM *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* E1527-13 (Standard), the All Appropriate Inquiries (AAI) Rule 40 CFR Part 312, and any additional requirements of Client.

The scope of services for this assessment included an evaluation of the following:

Physical characteristics – Consistent with Section 8.2.4 of the ASTM Standard Practice, a current USGS 7.5 Minute Topographic Map (or equivalent) showing the area on which the property is located shall be reviewed. It is the only standard physical setting source and the only physical setting source that is required to be obtained (and only if it is reasonably ascertainable). One or more additional physical setting sources may be obtained in the discretion of the environmental professional. Because such sources provide information about the geologic, hydrogeologic, hydrologic, or topographic characteristics of a site, discretionary physical setting sources shall be sought when deemed necessary by the environmental professional.

Environmental Records – Consistent with Section 8.2.1 of the ASTM Standard Practice, a review of the standard federal, state and tribal environmental records will be reviewed. Pursuant to Section 8.2.3 of the ASTM Standard Practice, additional local records and/or additional federal, state, or tribal records shall be checked when, in the judgment of the environmental professional, such additional records (1) are reasonably ascertainable, (2) are sufficiently useful, accurate, and complete in light of the objective of the records review, and (3) are generally obtained, pursuant to local good commercial and customary practice, in initial environmental site assessments in the type of commercial real estate transaction involved. If the property or any of the adjoining properties is identified on one or more of the standard environmental record sources, pertinent regulatory files and/or records associated with the listing will be reviewed provided the records are reasonably ascertainable and are available within a reasonable distance, cost and timeframe. If, in the environmental professional's opinion, such a review is not warranted, the environmental professional will provide an explanation within the report the justification for not conducting the regulatory file review.

Uses of the Property – Consistent with Section 8.3.2 of the ASTM Standard Practice, all obvious uses of the property shall be identified from the present, back to the property's first developed use, or back to 1940, whichever is earlier. This task requires reviewing only as many of the standard historical sources in 8.3.4.1 through 8.3.4.8 as are necessary and both reasonably ascertainable

DRAFT

and likely to be useful. The term "developed use" includes agricultural uses and placement of fill dirt. The report shall describe all identified uses, justify the earliest date identified, and explain the reason for any gaps in the history of use. Review of standard historical sources at less than approximately five year intervals is not required by this practice (for example, if the property had one use in 1950 and another use in 1955, it is not required to check for a third use in the intervening period). If the specific use of the property appears unchanged over a period longer than five years, then it is not required by this practice to research the use during that period.

Site Reconnaissance – Consistent with Sections 9.2.1 and 9.2.2 of the ASTM Standard Practice, on a visit to the property (the site visit), the property shall be visually and/or physically observed and any structure(s) located on the property to the extent not obstructed by bodies of water, adjacent buildings, or other obstacles shall be observed. The periphery of the property shall be visually and/or physically observed, as well as the periphery of all structures on the property, and the property shall be viewed from all adjacent public thoroughfares. If roads or paths with no apparent outlet are observed on the property, the use of the road or path shall be identified to determine whether it was likely to have been used as an avenue for disposal of hazardous substances or petroleum products. On the interior of structures on the property, accessible common areas expected to be used by occupants or the public (such as lobbies, hallways, utility rooms, recreation areas, etc.), maintenance and repair areas, including boiler rooms, and a representative sample of occupant spaces, shall be visually and/or physically observed. It is not necessary to look under floors, above ceilings, or behind walls.

The ASTM Standard Practice recognizes that there may be environmental issues or conditions at a property that parties may wish to consider. These are considered ASTM Non-Scope Considerations. The following ASTM non-scope considerations were included:

Asbestos Containing Material (ACM) - The potential for the presence of ACM was evaluated based on the age of the improvements, dates of renovation, and other relevant information. Appendix G of the USEPA Guidance Document: *Managing Asbestos in Place - A Building Owner's Guide to Operations and Maintenance Programs for Asbestos-Containing Materials* (the Green Book) was used as a guide in identifying suspect materials and the definition of suspect ACM and presumed asbestos containing material is taken from 29 CFR Parts 1910, et al. *Occupational Exposure to Asbestos; Final Rule*. Only readily accessible building materials were observed. No destructive means were utilized to gain access to hidden or inaccessible areas such as pipe chases, wet columns, wall voids and ceiling cavities. The level of this preliminary assessment was not intended to comply

DRAFT

with the survey requirements of the Asbestos Hazard Emergency Response Act (AHERA) 40 CFR Part 763, National Emission Standard for Hazardous Air Pollutants (NESHAP) 40 CFR 61; the General Duty Clause, 29 USC 654, Section 5; or other federal, state or local regulation.

Radon – The potential for elevated levels of indoor radon was based on available analytical results, published regional average levels, the usage of the buildings, and the type of construction and mechanical systems present. This evaluation was not designed or intended to comply with any regulatory agency requirements. Sampling, if any, was conducted using short-term radon detectors. The results of such testing are intended solely as a screen and may not be indicative of long-term average radon levels.

Lead-Based Paint (LBP) – The potential for the presence of LBP at the property was based on available analytical data, the age of the improvements, dates of renovation, and the current and proposed usage of the property. This evaluation was not designed or intended to comply with survey requirements outlined in Housing and Urban Development (HUD) regulations or other federal, state or local regulation.

Lead in Drinking Water – The potential for elevated levels of lead in the drinking water at the property was based on available analytical data, a determination of the source of the drinking water supply and a review of publically available compliance data reports.

Microbial Growth – The potential for microbial growth at the property was based on visual observations for signs of water intrusion, water damage, and suspect mold growth and interviews with property representatives. These observations were limited to the areas walked and should not be considered a comprehensive survey of the Property. A finding in this report that "mold is not a significant concern" or "no significant mold was identified" should not be interpreted as the building is free of mold.

Flood Plains and Wetlands - Evaluation based solely on a review of available Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM), or equivalent, and the United States Fish and Wildlife Service National Wetlands Inventory website. This screening should not be considered a formal flood hazard determination or wetlands delineation.

DRAFT

APPENDIX 1

Property Maps

DRAFT



Property Location

Raw Land
West Los Angeles Avenue
Moorpark, California 93021
BBG Project No. 0521011880



DRAFT

Property Layout

Raw Land

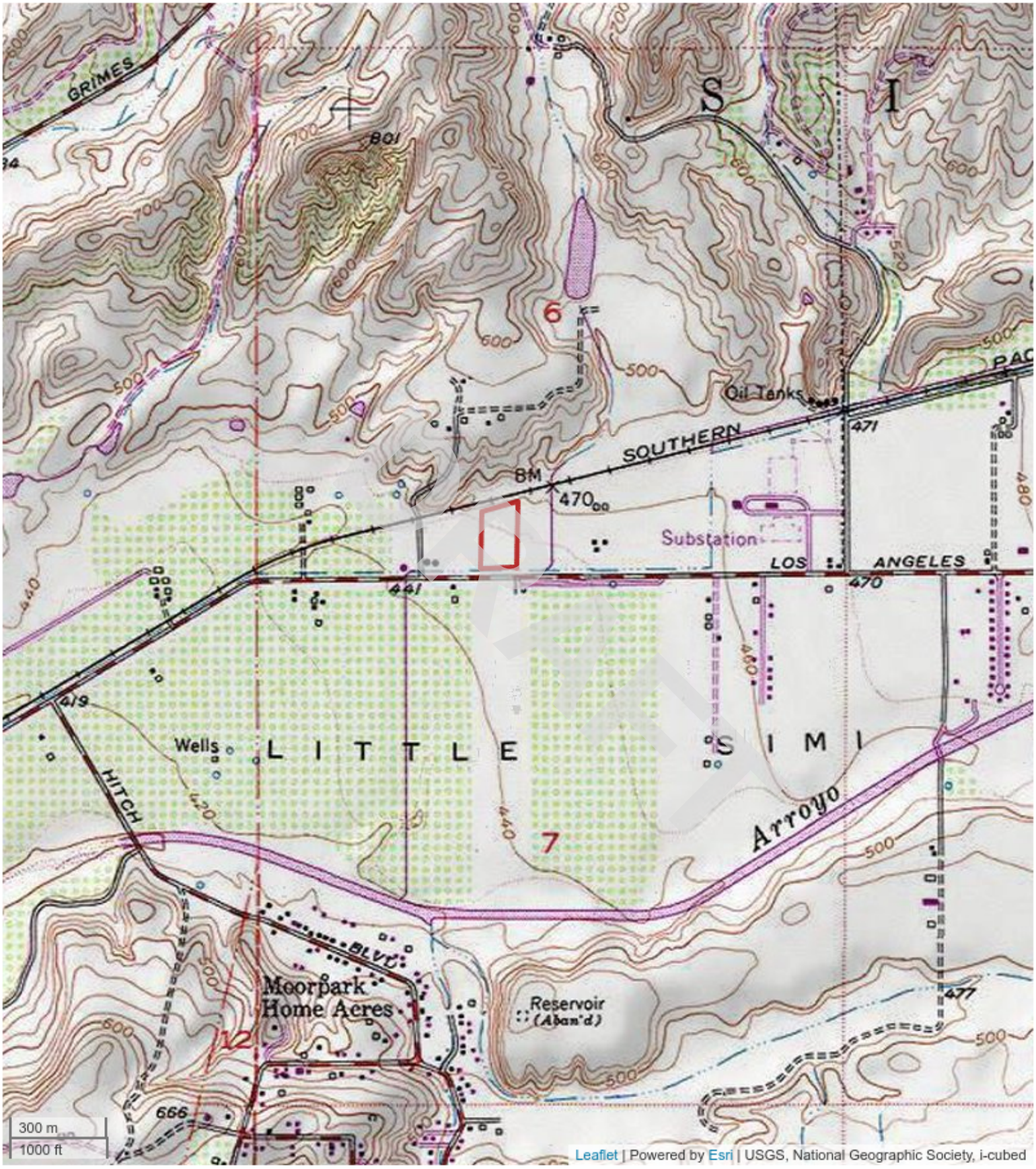
West Los Angeles Avenue

Moorpark, California 93021

BBG Project No. 0521011880

Anticipated Groundwater Flow Direction: Southwest

BBG



Topographic Map

Raw Land
West Los Angeles Avenue
Moorpark, California 93021
BBG Project No. 0521011880

BBG

APPENDIX 2

Photographs

DRAFT



1. View of the Property from southwest



2. View of the Property from south



3. View of the Property from southeast



4. View of the Property from east



5. View of the Property from east



6. View of the Property from northeast

DRAFT



7. View of the Property from north



8. View of the Property from north



9. View of the Property from northwest



10. View of the Property from west



11. View of the Property from west



12. View of abandoned pipe (possibly a former water well) on the southwestern portion

DRAFT



13. View of underground water pipeline along the southern boundary



14. View of flood control channel



15. View of agricultural land (orchards) to the north



16. View of transformers



17. View of industrial developments to the south



18. View of undeveloped land to the east

DRAFT



19. View of industrial developments to the west

DRAFT

APPENDIX 3

Supporting Documentation

DRAFT

RANCHO SIMI
PORTION TRACT L

Tax Rate Area
67011 67042 10082
10041 10005
10003 10060
10067 10075

511-20

19 | 6 | 21 | 02 | 06

(1 OF 3) Por. Par. B — LLA 820002122 — Por. Par. A

1320.00' | (20.00) | 215.51' | 326.65' N71°30'12"W | 180' | 1935.78' | (29.33) | 1320.00'

PAR. 2B-1 0.11Ac. | PAR. 1B 0.11Ac. | 50' | 30'

O.R.47681 3.23 AC.P. PAR.A

NORTH HILLS PY. (Private St.) | CASTLEBRITE ST. (Private St.) | (20.00) | 1320.00' | (20.00)

1"=400'

LINE | LINE | BDY | BDY | POSAS | (40.00) | (40.00)

(1 OF 3) LLA 820002122 Por. 1 Par.B 64.63 Ac.

2 80.74 Ac.

V.C.F.C.D. EASE | NORTH HILLS PY. | GOLDBAR DR. (Pvt. St.) | 3280/326 | 5 8.79 Ac.

24 22.02 Ac.

23 1.86 Ac. | 25 8.34 Ac. | 345' | 75' | VCFCD 2141/288 POR.A | 15' | 50' | 50' | ROAD

37 RS 38 | 295' | 25' | PRIVATE ROAD | VCFCD (B)2141/558 | 11 S.B.E.872-56-23E Par.19

Bk. 503

SIMI | LAS | 2640.00' | (40.00) | 0.04 Ac. 2B-2 | V.C.F.C.D. 2809-286 | PAR.2A 0.81 Ac. | 2640.00' | 270' | PAR.1C | RAILROAD | 40' | 2640.00' | 1.131' Ac. | VCFCD 2141/558A | 1243.29' | GABBERT | POINDEXTER AVE.

SBE 148 - 56 - 44 - 1

6 1.02 Ac. | 37 RS 38 | 270' | 120' | 150' | S.B.E. 872-56-23C Par.10 | 9 | S.B.E 872-56-23C Par. 11 | 8 | SOUTHERN PACIFIC | 60' | 30' | 269.19' | 10 S.B.E 872-56-23E Par. 18 | S.B.E 148-56-32 PAR. 4

N76°14'50"E | 363.14' | 40' | LLA 130627-0115460 | 359.30' | 748.46' | 890122650 | 563.65' | 144.28' | 122.06' | 520.87' | Par. 27 Par.B | Par. 26 A 5.90 Ac. | 20' | 753.35' | LLA 130627-0115460 | Por. 15 Par.B 6.46 Ac. | 1706-444 1.18 Ac. | 839.74' | NORTH | 14 5.23 Ac. | 903.74' | NORTH | 13 32.65 Ac. | 12 40.68 Ac. 26RS79

7 | SBE 872-56-22B PAR.4 | S.C.E.C. 3141/90 | 120' | SOUTH | MONTAIR DR. | 17 10.83 Ac. | 43PM76 Par.A | 43PM76 Par.B | SOUTH | NORTH 663.04' | 405.31' | 1706-444 81 Ac. | 30' | 547.50' | 1706-444 .12 Ac. | 261.47' | 20' | VCFCD | 20' | 1320.00' | 2142/205 Par.B 0.039 Ac. | 0.607 Ac. 2142/205A | 20' | 40' | 404.40' EAST | 150' | N89°14'10"E | 432.34' EAST | (20.00) | 20 | 60' | 208.71' | 98' | 306.71' | 208.71' | 21 1.25 Ac. | L=41.96' | R=27' | S.B.E.Par.2 148-56-3 | COMMERCE AVE. | 60'

(1 OF 3) LLA 820002122 Por. 19 Par.B 6.61 Ac. | 18 1.61 Ac. | East | LOS ANGELES | 369' | (29.33) | 352.99' | 1320' | (20.00) | 61RS61 | 2640.00' | 3184.72' | 890122650 | N0°24'31"E | 60' | V.C.F.C.D. 870041419 | HWY. 118 | S.B.E 148-56-44-1 | 1/4 Cor Com. to Secs. 6,&7, T2N, R19W | BUTTER CREEK RD | 85-040520 | N89°02'42"E 307.02' | TIERRA REJADA RD.

Bk. 504

Rancho Simi, M.R. Bk.3, Pg.7

CITY OF MOORPARK and VICINITY
Ventura County Assessor's Map.

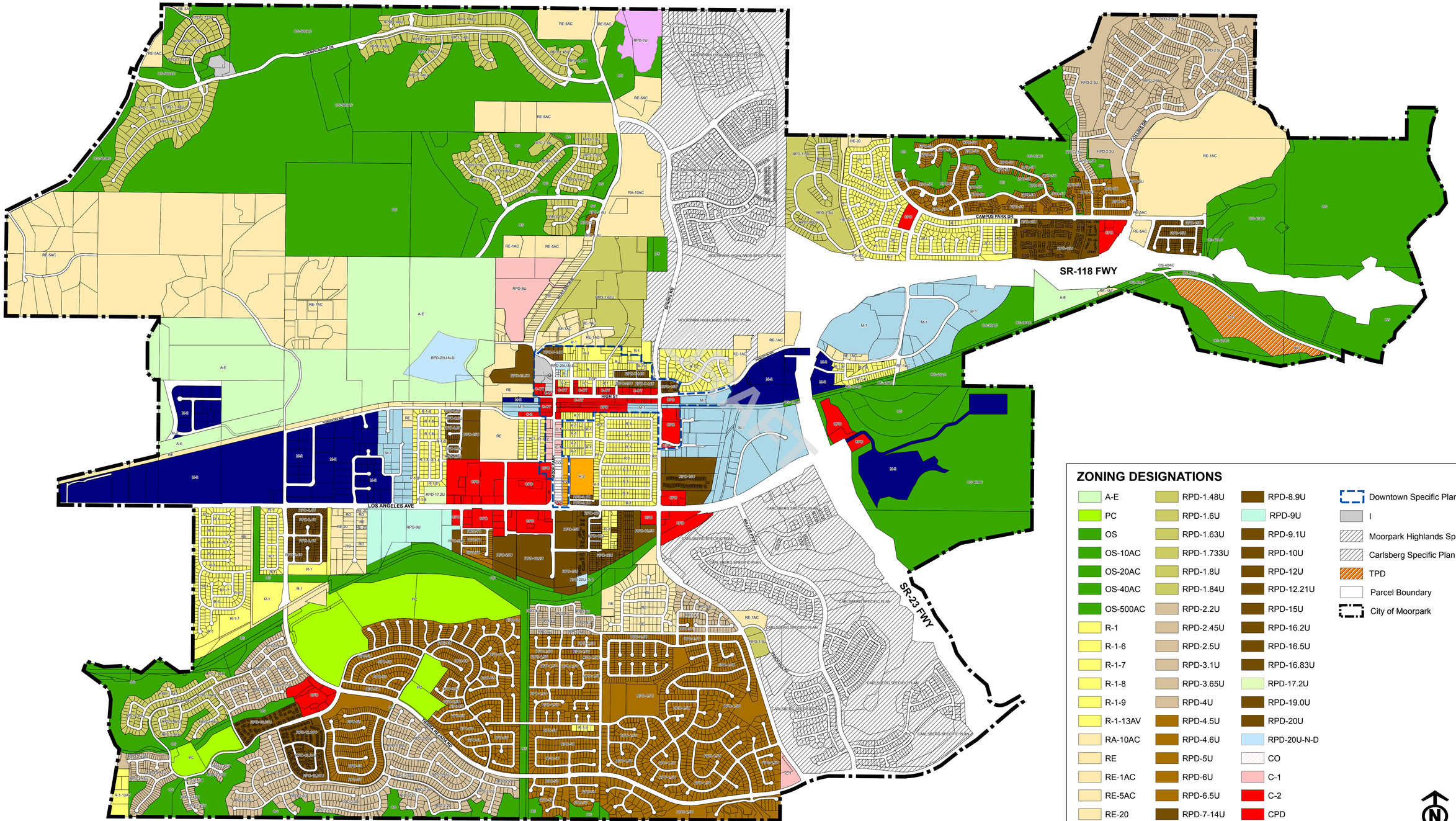
Assessor's Block Numbers Shown in Ellipses
Assessor's Parcel Numbers Shown in Circles
Assessor's Mineral Numbers Shown in Squares

DRAWN	REVISED	6-26-2020
REDRAWN	CREATED	1-25-2001
INKED PLOTTED	EFFECTIVE ROLL	02-03
PREVIOUS Bk.500, Portion Pg.34		
Compiled By Ventura County Assessor's Office		

NOTE: ASSESSOR PARCELS SHOWN ON THIS PAGE DO NOT NECESSARILY CONSTITUTE LEGAL LOTS CHECK WITH COUNTY SURVEYOR'S OFFICE OR PLANNING DIVISION TO VERIFY

DRAFT

City of Moorpark - Zoning Map



ZONING DESIGNATIONS

- A-E
- PC
- OS
- OS-10AC
- OS-20AC
- OS-40AC
- OS-500AC
- R-1
- R-1-6
- R-1-7
- R-1-8
- R-1-9
- R-1-13AV
- RA-10AC
- RE
- RE-1AC
- RE-5AC
- RE-20
- RO
- R-2
- RPD-1U
- RPD-1.48U
- RPD-1.6U
- RPD-1.63U
- RPD-1.733U
- RPD-1.8U
- RPD-1.84U
- RPD-2.2U
- RPD-2.45U
- RPD-2.5U
- RPD-3.1U
- RPD-3.65U
- RPD-4U
- RPD-4.5U
- RPD-4.6U
- RPD-5U
- RPD-6U
- RPD-6.5U
- RPD-7-14U
- RPD-7U
- RPD-8U
- RPD-8.4U
- RPD-8.9U
- RPD-9U
- RPD-9.1U
- RPD-10U
- RPD-12U
- RPD-12.21U
- RPD-15U
- RPD-16.2U
- RPD-16.5U
- RPD-16.83U
- RPD-17.2U
- RPD-19.0U
- RPD-20U
- RPD-20U-N-D
- CO
- C-1
- C-2
- CPD
- C-OT
- M-1
- M-2
- Downtown Specific Plan
- I
- Moorpark Highlands Specific Plan
- Carlsberg Specific Plan
- TPD
- Parcel Boundary
- City of Moorpark

N

0 400 800 1,600
Feet

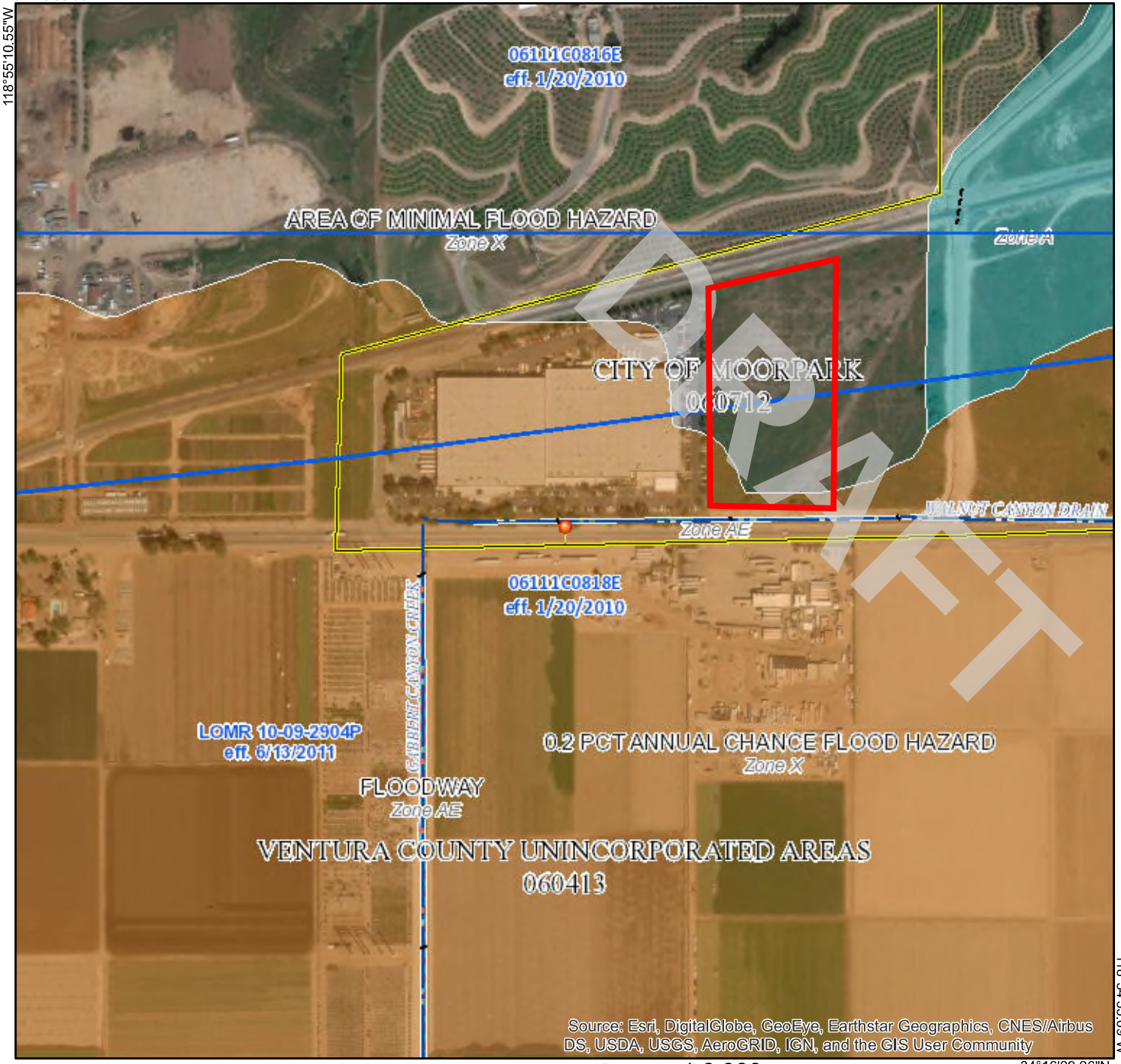
Source: City of Moorpark, September 2008
County of Ventura, GIS Data, July 2008

A larger and/or more detailed version of the City's General Plan and Zoning Maps is available for download at https://www.moorparkca.gov or for purchase at Moorpark City Hall, 799 Moorpark Avenue, Moorpark, CA 93021

Approved by / Date	Revision
City of Moorpark September 22, 2020	

National Flood Hazard Layer FIRMette

FEMA



0 250 500 1,000 1,500 2,000 Feet

1:6,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth
- Regulatory Floodway *Zone AE, AO, AH, VE, AR*

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The base map shown complies with FEMA's base map accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 5/12/2018 at 5:04:17 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: base map imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

U.S. Fish and Wildlife Service

National Wetlands Inventory

0518001002

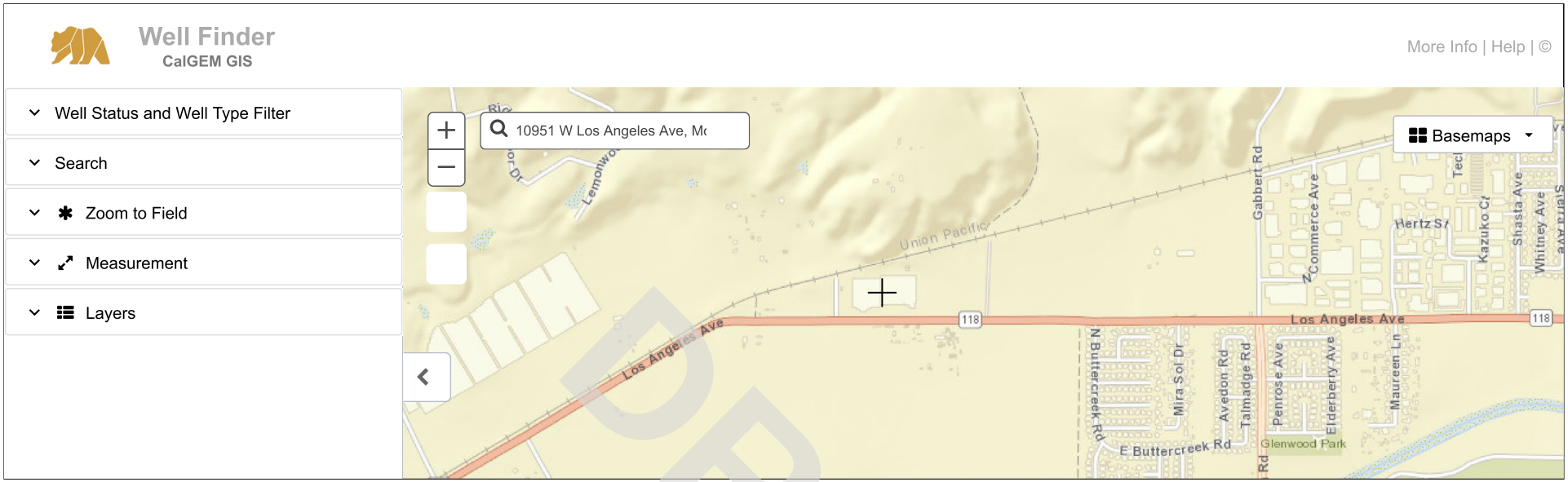


May 12, 2018

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.



DRAFT

Geologic Energy Management Division Data & Maps

Show 10 entries

Search:

Title	Division	Description	Metadata	Access	Updated
Aliso Canyon Safety Review	CalGEM	A webmap showing the current status of the Aliso Canyon Safety Review.	Metadata	Web Map [AGOL]	As needed
Aliso Canyon Safety Review	CalGEM	A feature service with the current status of the Aliso Canyon Safety Review.	Metadata	Feature Service [AGOL]	As needed

BBG

PHASE I ENVIRONMENTAL SITE ASSESSMENT

PERFORMED ON:
VACANT LAND
CALIFORNIA 118
MOORPARK, CALIFORNIA 93021
BBG PROJECT NO.: 0518001002

DRAFT

PREPARED FOR:
AMIR DEVELOPMENT CO.
8730 WILSHIRE BOULEVARD, SUITE 300
BEVERLY HILLS, CALIFORNIA 90211

PREPARED BY:
BBG ASSESSMENT
4615 SOUTHWEST FREEWAY, SUITE 810
HOUSTON, TEXAS 77027

DATE ISSUED: MAY 15, 2018

May 15, 2018

Mr. Keenan Wolens
Amir Development Co.
8730 Wilshire Boulevard, Suite 300
Beverly Hills, California 90211

RE Phase I Environmental Site Assessment of
Vacant Land
California 118
Moorpark, California 93021
BBG Project No.: 0518001002

Dear Mr. Wolens:

AWA, LLC dba BBG Assessment (BBG) has completed a Phase I Environmental Site Assessment (ESA) of the above referenced property. The assessment was conducted in accordance with the ASTM International (ASTM) E1527-13 *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*, any client specific scope of work provided, and generally accepted industry standards.

This report was prepared solely for the use of Amir Development Co. and its successors and assigns (hereinafter "Client" or "User") and any party specifically referenced in Section 2.6 of this report. No other party shall have the right to rely on this report or the findings herein, without the prior written consent of BBG.

Sincerely,
BBG ASSESSMENT

Aaron Klenke
Director

DRAFT

PHASE I ENVIRONMENTAL SITE ASSESSMENT SUMMARY							
VACANT LAND							
CALIFORNIA 118							
MOORPARK, VENTURA COUNTY, CALIFORNIA 93021							
BBG PROJECT NO.: 0518001002							
Report Section		NFA	REC and/or CREC	de minimis	HREC	BER	Comment
6.0	Environmental Records Review	X					
7.0	Historical Uses	X					
8.2	Hazardous Substance/Petroleum Products	X					
8.2	Storage Tanks	X					
8.2	Polychlorinated Biphenyls (PCBs)	X					
8.2	Other Visual Observations	X					
9.1	Asbestos-Containing Materials (ACM)	X					
9.2	Radon	X					
9.3	Lead-Based Paint (LBP)	X					
9.4	Drinking Water	X					
9.5	Microbial Growth	X					
9.6	Flood Zone and Wetlands	X					

NFA – No Further Action
REC – Recognized Environmental Condition
CREC – Controlled Recognized Environmental Condition
HREC – Historical Recognized Environmental Condition
BER – Business Environmental Risk

DRAFT

4615 Southwest Freeway, Suite 810, Houston, Texas 77027
Main Office: 713.942.8980 Fax: 713.942.8987

TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY 1
1.1 Property Description 1
1.2 Findings, Opinions and Conclusions 1
1.3 Recommendations 2

2.0 INTRODUCTION 3
2.1 Purpose 3
2.2 Scope of Work 3
2.3 Significant Assumptions 4
2.4 Limiting Conditions 4
2.5 Special Terms and Conditions 5
2.6 Reliance 5

3.0 PROPERTY DESCRIPTION 6
3.1 Property Details 6
3.2 Utility and Service Providers 6
3.3 Adjoining Properties 6

4.0 PHYSICAL SETTING 7
4.1 Topography 7
4.2 Surface Water Bodies 7
4.3 Geology and Hydrology 7
4.4 Minerals Exploration and Production 8

5.0 INTERVIEWS, RECORDS AND MUNICIPAL INFORMATION 9
5.1 User Provided Information 9
5.2 Owners, Operators and/or Neighboring Properties 10
5.3 Municipal/Government Agencies 10

6.0 ENVIRONMENTAL RECORDS 12
6.1 Environmental Records Sources 12
6.2 Environmental Records Summary 15

7.0 HISTORICAL USES 16
7.1 Aerial Photographs 16
7.2 Fire Insurance Maps 17
7.3 Property Tax Files 17
7.4 Recorded Land Title Records 18
7.5 Historical USGS Topographic Maps 18
7.6 Local Street Directories 18
7.7 Building Department Records 18
7.8 Zoning/Land Use Records 18
7.9 Previous Assessment/Reports 18

DRAFT

7.10 Other Historical Sources 19
7.11 Data Failure 19
7.12 Historical Use Summary 19

8.0 PROPERTY RECONNAISSANCE AND INVESTIGATION 21
8.1 Methodology and Limiting Conditions 21
8.2 Visual Observations 21
8.3 Visual Observations Summary 22

9.0 ASTM NON-SCOPE CONSIDERATIONS 23
9.1 Asbestos Containing Materials (ACM) 23
9.2 Radon 23
9.3 Lead-Based Paint (LBP) 24
9.4 Drinking Water 24
9.5 Microbial Growth 24
9.6 Flood Zone and Wetlands 24
9.7 ASTM Non-Scope Consideration Summary 25

10.0 FINDINGS, OPINIONS, CONCLUSIONS AND RECOMMENDATIONS 26
10.1 Findings, Opinions and Conclusions 26
10.2 Recommendations 26

11.0 DEVIATIONS AND ADDITIONAL SERVICES 27

12.0 DECLARATION OF ENVIRONMENTAL PROFESSIONAL 28

13.0 DETAILED SCOPE OF WORK 29

Appendix 1 Property Maps and Diagrams
Appendix 2 Photographs
Appendix 3 Supporting Documentation
Appendix 4 Regulatory Database Report
Appendix 5 Historical Documentation
Appendix 6 Personnel Qualifications

DRAFT

1.0 EXECUTIVE SUMMARY

1.1 Property Description

Property Name:	Vacant Land
Property Address:	California 118
City, State Zip Code:	Moorpark, California 93021

The Property consists of an irregular-shaped parcel of land totaling 5.9 acres with no improvements. A concrete-lined water drainage feature and water pipeline are located along the southern Property boundary, paralleling California 118 (Los Angeles Avenue). Railroad tracks parallel the northern Property boundary.

A Property Location Map and a Property Diagram are included in Appendix 1. Photographs of the Property are provided in Appendix 2.

1.2 Findings, Opinions and Conclusions

BBG has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527 of Vacant Land, California 118, Moorpark, California, the Property. Any exceptions to, or deletions from, this practice are described in Section 11 of this report. This assessment has revealed no evidence of RECs in connection with the Property.

A de minimis condition is a condition that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. This assessment has revealed no evidence of de minimis conditions.

An historical recognized environmental condition (HREC) refers to an environmental condition which would have been considered a REC in the past, but which is no longer considered a REC based on subsequent assessment and/or remediation of any contaminants to below the most restrictive (generally residential) cleanup target concentrations or regulatory closure with no formal or implied restricted uses. The assessment has revealed no evidence of HRECs in connection with the Property.

No significant data gaps were identified that would affect the ability of the environmental professional to identify RECs at the Property.

The ASTM Standard was designed solely to meet the requirements of the USEPA's All Appropriate Inquiries (AAI) to permit the potential purchaser to satisfy one of the requirements to qualify for the innocent landowner, contiguous property owner, or bona fide prospective

DRAFT

purchaser limitations on CERCLA liability. It is possible for there to be business environmental risks (BERs) related to ASTM scope considerations that do not meet the definition of a REC. This assessment has revealed no evidence of BERs associated with the standard ASTM scope considerations.

At the request of Client, BBG conducted a preliminary evaluation for asbestos-containing material (ACM), radon, lead-based paint (LBP), drinking water quality, mold, floodplains and wetland which are ASTM non-scope considerations. This assessment has revealed no evidence of BERs relating to these ASTM non-scope considerations.

1.3 Recommendations

No further action is recommended based on the information available as of the date of this report.

DRAFT

2.0 INTRODUCTION

2.1 Purpose

The purpose of the ESA is to identify Recognized Environmental Conditions (RECs), Controlled Recognized Environmental Conditions (CRECs) and Historical Recognized Environmental Conditions (HRECs) and de minimis conditions as defined by ASTM E1527-13.

The term REC is defined as "the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment."

The term CREC is defined as "a recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls."

The term HREC is defined as "a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls."

The term de minimis condition is defined as "a condition that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be de minimis are not RECs or CRECs."

The term Business Environmental Risk (BER) is defined as a risk which can have a material environmental or environmentally-driven impact on the business associated with the current or planned use of a parcel of commercial real estate, not necessarily limited to those environmental issues required to be investigated as defined by ASTM.

2.2 Scope of Work

The ESA was conducted in accordance with ASTM E1527-13 *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (Standard Practice), the scope of work provided by the Client, and generally accepted industry standards, and is designed to meet the United States Environmental Protection Agency (USEPA) Standards

DRAFT

and Practices for All Appropriate Inquiries (AAI) pursuant to 40 Code of Federal Regulations (CFR) Part 312.

Additionally, BBG addressed certain ASTM non-scope considerations. These non-scope considerations include asbestos-containing materials (ACM), radon, lead-based paint (LBP), microbial growth, drinking water quality, flood zones, and wetlands.

A more detailed scope of work is provided in Section 13.

2.3 Significant Assumptions

- BBG assumes the Property has been correctly identified by the User, designated representative of the User, property owner or operator, and/or the designated representative of the property owner or operator.

- BBG assumes that the User, designated representative of the User, property owner or operator, and/or the designated representative of the property owner or operator used good faith in answering questions about and providing information for the Property.

- BBG assumes the direction of groundwater is consistent with the contours depicted on the United States Geological Survey (USGS) topographic map covering the Property, unless otherwise specified by actual well data for the Property or properties in the area, or BBG's experience and knowledge of the area.

2.4 Limiting Conditions

- The scope of work completed was designed solely to meet the needs of BBG's Client. BBG shall not be liable for any unintended usage of this report by another party. Additionally, based on the ASTM Standard Practice, the ESA is only valid if completed within 180 days of an acquisition or the transaction necessitating the ESA, unless updated in accordance with terms outlined within the Standard Practice.

- No ESA can wholly eliminate uncertainty regarding the potential for RECs in connection with a property. This ESA was designed to reduce but not eliminate uncertainty regarding the existence of such conditions in a manner that recognizes reasonable limits of time and cost. BBG has completed this ESA in accordance with generally accepted consulting practices, and makes no other warranties, either expressed or implied, as to the character and nature of such services or product.

- An ESA is intended to be a non-intrusive investigation and generally does not include sampling or testing of air, soil, water, or building materials. No destructive testing was completed and concealed areas, such as behind walls or within machinery, were not accessed. Any testing, including that for ACM, LBP and radon, is designed solely to meet the needs of

DRAFT

the Client, not to meet any local, state or federal regulations and should not be utilized as such. Any test results obtained are for the personal use of Client only and are not intended for submittal to any regulatory agency.

- Information needed to complete the ESA is based on personal interviews, government records, published resources, and various historical documents. Accuracy and completeness of information varies among information sources and is often inaccurate or incomplete. An environmental professional is not required by the ASTM Standard Practice to verify independently the information provided but may rely on information provided unless the environmental professional has actual knowledge that certain information is incorrect or unless it is obvious that certain information is incorrect based on other information obtained by or otherwise actually known to the environmental professional.

- BBG shall have no on-going obligation to obtain and include information that was not reasonably ascertainable, practically reviewable, or provided to BBG in a reasonable timeframe to formulate an opinion and complete the assessment by the agreed upon due date.

- An ESA includes some information that may be relevant to regulatory compliance, but is not intended and shall not be construed as a compliance audit and cannot be considered a verification of regulatory compliance. Depending on its past, present or future intended use, the property under review may or may not be subject to regulation and permitting under environmental and health and safety laws, such as, but not limited to, the Clean Air Act, the Clean Water Act, the Solid Waste Disposal Act, the Occupational Safety and Health Act, and other federal, state and local regulations. BBG assumes no responsibility or liability respecting regulatory permitting or compliance issues.

2.5 Special Terms and Conditions

There are no special terms and conditions associated with this ESA.

2.6 Reliance

This investigation was conducted on behalf of and for the exclusive use of Amir Development Co. and its successors and assigns (Client). This report, and the findings contained herein, shall not, in whole or part, be disseminated or conveyed to or used by any other party without the prior written consent of BBG. Any unauthorized party using or relying upon the Report shall be liable to BBG for equitable compensation and appropriate punitive damages, and shall be responsible to reimburse BBG for and indemnify, defend and hold BBG harmless from and against any and all costs, claims, liabilities, expenses, lost profits and damages arising as a direct or indirect result of such unauthorized use or reliance.

DRAFT

3.0 PROPERTY DESCRIPTION

3.1 Property Details

Property Size:	5.9 acres
Source:	Ventura County Assessor
Property Usage:	Undeveloped
Number of Buildings:	0
Legal Description:	The legal description is included in Appendix 3.

3.2 Utility and Service Providers

Electricity:	Southern California Edison
Gas:	Southern California Gas Company
Potable Water:	Ventura County Water Works District No.1
Sanitary Sewer:	Ventura County Water Works District No.1
Storm Water:	Ventura County, City of Moorpark

3.3 Adjoining Properties

The ASTM Standard Practice defines adjoining properties as "any real property or properties the border of which is contiguous or partially contiguous with that of the property, or that would be contiguous or partially contiguous with that of the property but for a street, road, or other public thoroughfare separating them." The following adjoining properties were noted.

North:	Railroad tracks, followed by agricultural land (orchards)
East:	Undeveloped land
South:	West Los Angeles Avenue, followed by Muranaka Farms (11018 East Los Angeles Avenue)
West:	Pentair (10951 West Los Angeles Avenue)

BBG's observations of the adjoining properties did not identify evidence that would indicate the potential presence of a REC, such as fueling facilities, dry cleaning operations, improperly stored or leaking drums, or significantly stained surfaces.

DRAFT

4.0 PHYSICAL SETTING

Information regarding topography, geology and hydrology are used to evaluate the likelihood of hazardous substances and petroleum products to migrate onto, within or from the Property. BBG attempted to determine the general physical setting of the Property using one or more of the physical setting sources outlined in Section 8.2.4 of the ASTM Standard Practice.

4.1 Topography

Property Elevation:	Approximately 450 feet above mean sea level (MSL)
Topography:	The Property is relatively flat, with a slight gradient to the southwest. The areas surrounding the Property slope to the southwest.
Source:	Property elevation and topography are based upon a review of the applicable USGS topographic map. The relevant portion of the topographic map is included in Appendix 1.

4.2 Surface Water Bodies

On-Site Water Bodies:	There are no surface water bodies on or bordering the Property. A drainage channel is located along the south side of the Property, along West Los Angeles Avenue.
Nearest Surface Water Body:	The nearest off-site surface water body is Arroyo Simi, located approximately 0.63 mile south of the Property.

4.3 Geology and Hydrology

Geology and Soils:	The Property is underlain by Metz loamy sand (MeC, 2 to 9 percent slopes), Pico sandy loam (PcA, 0 to 2 percent slopes) and Sandy alluvial fan (Sd) per the USDA NRCS Web Soil Survey. The Property lies within the Coastal Basin aquifer system. The California coastal region has been subjected to intense tectonic forces for millions of years. Folding, faulting of marine sediments, and associated volcanism resulted in the formation of the Klamath and the Salmon Mountains in northern California and the Coast Ranges that extend along most of the California coast. Terrestrial, marine, and volcanic rocks deposited in intermountain valleys compose the aquifers herein

DRAFT

	called the Coastal Basins aquifers. The California Department of Water Resources considers more than 100 coastal basins to be "significant" because of the amount of ground water potentially obtainable or the scarcity of surface-water sources in a basin. Nearly all of the large population centers in California are located in the coastal basins.
Source:	USGS Geologic Map of CA NRCS Soil Survey of Moorpark, CA USDA Web Soil Survey
Depth to Groundwater:	Between 30 and 50 feet below grade
Anticipated Flow Direction:	Southwest
Basis of Flow Direction:	The USEPA *Ground Water Handbook, Vol.1 Ground Water and Contamination*, September 1990, states that the water table typically conforms to surface topography. This means the direction of flow for shallow groundwater is generally from higher elevations to lower elevations. Localized flow direction may vary as a result of tide, rainfall, development, geologic characteristics, nearby surface water bodies, underground utilities such as storm drains, septic systems and sewers, or other influences such as the presence of high volume wells.

4.4 Minerals Exploration and Production

Oil and Gas Wells:	No oil or gas wells or oil and gas production equipment were observed at the Property. No wells were depicted on the USGS Topographic Map. According to the California Department of Conservation Division of Oil, Gas and Geothermal Resources (DOGGR), there are no oil or gas wells on the Property.
Pipelines:	No petroleum pipelines were observed on or adjoining the Property. No pipelines were depicted on the USGS Topographic Map. According to DOGGR, there are no pipelines on the Property.
Mining Activities:	No mining activities were observed on or adjoining the Property. No mining activities were depicted on the USGS Topographic Map.

DRAFT

5.0 INTERVIEWS, RECORDS AND MUNICIPAL INFORMATION

5.1 User Provided Information

User provided information is intended to help identify the possibility of RECs in connection with the Property. According to the ASTM Standard Practice and EPA's AAI Rule, the following items should be researched by the prospective landowner or grantee, and the results of such inquiries may be provided to the environmental professional. The responsibility for qualifying for Landowner Liability Protections (LLPs) by conducting the following inquiries ultimately rests with the User, and providing the following information to the environmental professional would be prudent if such information is available. The AAI rule does not require submission of this information to the environmental professional.

- Recorded Land Title Records

User did not provide BBG the results of a search of recorded land title records for the purpose of identifying environmental liens filed or recorded against the Property or activity and use limitations (AULs) in place at the Property under federal, tribal, state or local law.

- Specialized or Actual Knowledge or Experience

User did not inform BBG of specialized knowledge of conditions indicative of releases or threatened releases at the Property or at adjoining properties which could impact the Property. User did not inform BBG of actual knowledge of environmental liens or AULs encumbering the Property or in connection with the Property.

- Significantly Lower Purchase Price

User did not provide information to BBG indicating the purchase price of the Property was below the fair market price for a comparable property, or that any difference in price was likely the result of the presence of hazardous substances or petroleum products.

- Commonly Known or Reasonably Ascertainable Information

User did not inform BBG of any commonly known or reasonably ascertainable information within the local community about the Property.

- Degree of Obviousness

User did not indicate any reason to suspect or have knowledge of the obvious presence or likely presence of releases or threatened releases at the Property.

DRAFT

- Reason for Performing the Phase I ESA

User indicated the reason for conducting the ESA was to assist with User's pre-acquisition due diligence and to qualify for a landowner liability protection (LLP) to CERCLA liability.

5.2 Owners, Operators and/or Neighboring Properties

Key Site Manager:	Not applicable
Pertinent Information:	BBG was not provided a property owner, operator or escort knowledgeable about the Property to interview as a Key Site Manager as defined by the ASTM Standard Practice. Based on the other sources of information available, the lack of a Key Site Manager is not considered a critical data gap.

5.3 Municipal/Government Agencies

Fire Department Contact:	Custodian of Records
Department Name:	Ventura County Fire Protection District, Station No. 42
Telephone/Email/Website:	(805) 383-4718
Pertinent Information:	BBG contacted the Ventura County Fire Protection District, Station No. 42to obtain information pertaining to USTs, ASTs, reported incidents of hazardous material releases, or other similar circumstances that could be of environmental concern at the Property. No records pertaining to the Property were identified.

Building Department Contact:	Ray Young, Building Official
Department Name:	Moorpark Building and Safety Division
Telephone/Email/Website:	(805) 517-6200
Pertinent Information:	BBG contacted the Moorpark Building and Safety Division to obtain certificates of occupancy, permits for the installation or removal of tanks, or other similar circumstances that could be of environmental concern at the Property. No records pertaining to the Property were identified.

DRAFT

Health Department Contact:	Certified Unified Program Agency (CUPA), Hazardous Materials Program
Department Name:	Ventura County Environmental Health Division
Telephone/Email/Website:	http://www.vcrma.org/envhealth/cupa/index.html
Pertinent Information:	BBG contacted the Ventura County Environmental Health Division to obtain information pertaining incidents of hazardous material releases or other similar circumstances that could be of environmental concern at the Property. No records pertaining to the Property were identified.
APCD Contact:	Ventura County Air Pollution Control District (APCD) Facility Info System
Website:	http://www.vcapcd.org/FI.htm
Pertinent Information:	BBG visited the APCD website for information indicating current and/or historical hazardous materials usage, storage or releases, presence of USTs, Permits to Operate (PTO), Notices of Violation (NOV), or Notices to Comply (NTC). No records pertaining to the Property were identified.
RWQCB Contact:	Regional Water Quality Control Board (RWQCB)
Website:	http://geotracker.waterboards.ca.gov/map
Pertinent Information:	BBG visited the RWQCB's GeoTracker for information on the Property and/or nearby sites of concern to identify any evidence of unauthorized releases of hazardous materials to the groundwater. Cases typically handled by the RWQCB include releases from USTs. The Property was not identified on the RWQCB GeoTracker website.

DRAFT

6.0 ENVIRONMENTAL RECORDS

BBG obtained a commercially-available regulatory records database report containing the standard environmental record sources identified in ASTM 1527-13 as well as any additional environmental record source determined to be: 1) reasonably ascertainable; 2) sufficiently useful, accurate and complete; and 3) generally obtained, pursuant to local good commercial or customary practice in initial ESAs in the type of commercial real estate transaction involved. A detailed description of the records reviewed and a listing of all of the identified sites are provided in Appendix 4. Accuracy and completeness of record information varies among information sources and is often inaccurate or incomplete. BBG cannot warrant the accuracy of the information, but has made reasonable efforts to compensate for mistakes or insufficiencies in the information reviewed that are obvious in light of other information of which BBG has actual knowledge. BBG reviewed the environmental record sources to identify sites involved in the storage, use, generation, disposal, or release of petroleum products and/or hazardous substance and has evaluated the potential for releases at the Property or the migration of contaminants onto the Property from off-site sources via soil, groundwater, or vapor.

6.1 Environmental Records Sources

ENVIRONMENTAL RECORD SOURCES	SEARCH DISTANCE	PROPERTY LISTED	TOTAL PLOTTED
Federal NPL	1.0 miles	No	0
Federal Delisted NPL	0.5 miles	No	0
Federal SEMS/CERCLIS	0.5 miles	No	0
Federal SEMS Archive/CERCLIS NFRAP	0.5 miles	No	0
Federal RCRA CORRACTS	1.0 miles	No	0
Federal RCRA TSD	0.5 miles	No	0
Federal RCRA generators	Property and adjoining	No	2
Federal institutional/engineering controls	Property only	No	0
Federal ERNS	Property only	No	0
State and tribal-equivalent NPL	1.0 miles	No	0
State and tribal-equivalent CERCLIS	0.5 miles	No	0
State and tribal landfill and solid waste	0.5 miles	No	1
State and tribal leaking storage tanks	0.5 miles	No	0
State and tribal registered storage tanks	Property and adjoining	No	2
State and tribal institutional/engineering controls	Property only	No	0

DRAFT

ENVIRONMENTAL RECORD SOURCES	SEARCH DISTANCE	PROPERTY LISTED	TOTAL PLOTTED
State and tribal voluntary cleanup	0.5 miles	No	0
State and tribal Brownfield	0.5 miles	No	0
Additional environmental record sources	Various	No	2
EDR exclusive records	Various	No	0

Anticipated Groundwater flow direction: Southwest

The groundwater flow direction is used to determine whether sites are located up-, cross- or down-gradient of the Property, which provides an indication of their potential to impact the Property.

- Property

The Property was not identified on the environmental record sources reviewed.

- Federal RCRA Generator Facilities

The Resource Conservation and Recovery Act (RCRA) generator database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by RCRA. While ASTM only requires reviewing the RCRA generator database for the Property and adjoining properties, the database search looked at a wider radius to cover mapping errors. Two generator facilities were identified. RCRA generator facilities located beyond the Property and adjoining properties are generally not considered RECs. BBG reviewed the sites identified and determined that one of the identified sites is adjoining.

KDI American Products at 10951 West Los Angeles Avenue was identified adjacent to the west of the Property. The facility is listed as a Small Quantity Generator (SQG). No violations are noted for the facility. No visual indications of concern were noted during the reconnaissance. BBG accessed the USEPA Envirofacts database for additional information. The database confirmed the SQG designation. Based on the Enforcement and Compliance History Online (ECHO) report, the current compliance status is listed as "No Violations." Per the ECHO Report, no inspections have been conducted at and no enforcement actions have been taken against the facility in the last five years. Based on the lack of noted violations or enforcement actions, lack of visual indication of concern noted during the reconnaissance and the fact the facility is not listed on a database of sites with suspected or confirmed releases, this facility is not considered a REC in connection with the Property and additional file review is not warranted.

DRAFT

- State and Tribal Landfill and/or Solid Waste Disposal Sites

Solid Waste Facility/Landfill (SWF/LF) type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites. One SWF/LF site was identified. Peach Hill Organic recycling, 10765 Los Angeles Avenue, is located approximately ¼ mile west-southwest and down-gradient of the Property. The site is a green waste composting operation. Based on the nature of the facility operations and down-gradient location, this listing is not considered a REC in connection with the Property.

- State and Local Registered Storage Tank Facilities

While ASTM only requires reviewing the registered storage tank database for the Property and adjoining properties, the database search looked at a wider radius to cover mapping errors. No registered underground storage tank (UST) and two registered aboveground storage sites were identified. BBG reviewed the identified sites and determined that the site is a duplicate listing and south adjoining. Muranaka Farms at 11018 East Los Angeles Avenue is listed as having ASTs permitted by the Ventura County CUPA. No leaks, spills or releases were reported. Based on the regulatory status, this listing is not considered a REC to the Property.

- Additional Environmental Databases

California historically maintained numerous state and county UST databases, which are generally redundant with the UST, LUST and SLIC databases discussed above. EDR searched the Historical UST database, Facility Inventory Database (FID UST), and the Statewide Environmental Evaluation and Planning System (SWEEPS UST), none of which has been updated since the 1990s. Two sites were identified. BBG reviewed the identified sites and determined that the site is a duplicate listing and north adjoining. JD McGrath Farms at 11015 West Los Angeles Avenue is the address of the north adjoining orchards. The site is listed with one historical 550-gallon gasoline UST installed in 1939 located on a farm. No leaks, spills or releases were reported. Based on the regulatory status, this listing is not considered a REC to the Property.

- Unplottable Sites

The environmental records search sometimes includes a list of "unplottable" or "orphan" sites which may or may not be located within the minimum search distances. Nine sites were listed. Based on locations, compliance status and/or the nature of the listing, none of these sites is believed to be a REC in connection with the Property.

DRAFT

6.2 Environmental Records Summary

BBG did not identify environmental records for the Property that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the Property or into the ground, ground water, or surface water of the Property that would be considered a REC in connection with the Property. BBG did not identify environmental records indicating a release of hazardous substances or petroleum products from neighboring properties likely to migrate onto the Property via soil, groundwater or vapor pathways that would be considered a REC or a VEC in connection with the Property.

DRAFT

7.0 HISTORICAL USES

BBG attempted to develop a history of the previous uses of the Property and surrounding area in order to help identify the likelihood of past uses having led to RECs in connection with the Property. Efforts were made to identify the uses of the Property back to the Property's first use, or back to 1940, whichever is earlier. BBG relied upon the standard historical sources listed in Section 8.3.4 of the ASTM Standard Practice. Only the sources deemed both reasonably ascertainable and likely to be useful were used.

7.1 Aerial Photographs

Aerial photographs, which are of a sufficient resolution to allow identification of development and activities of areas encompassing the Property, can be used in documenting the historical usage of a property. BBG reviewed the following aerial photographs as provided by EDR, Inc., which are included in Appendix 5.

Date:	1927, 1938, 1947, 1952	
Property:	Agricultural / orchards	
Adjoining Properties:	North:	Railroad tracks, followed by agricultural land and orchards
	East:	Orchards
	South:	Los Angeles Avenue, followed by a rural residence and agricultural land
	West:	Orchards

Date:	1959, 1969	
Property:	Agricultural (former orchard)	
Adjoining Properties:	North:	Railroad tracks, followed by agricultural land and orchards
	East:	Agricultural (former orchard)
	South:	Los Angeles Avenue, followed by a rural residence and agricultural land
	West:	Agricultural (former orchard)

DRAFT

Date:	1978, 1985	
Property:	Undeveloped (former orchard)	
Adjoining Properties:	North:	Railroad tracks, followed by agricultural land and orchards
	East:	Undeveloped (former orchard)
	South:	Los Angeles Avenue, followed by a farm and agricultural land
	West:	Undeveloped (former orchard)

Date:	1994, 2005, 2010, 2014	
Property:	Undeveloped (former orchard)	
Adjoining Properties:	North:	Railroad tracks, followed by agricultural land and orchards
	East:	Undeveloped (former orchard)
	South:	Los Angeles Avenue, followed by a farm and agricultural land
	West:	Industrial

DRAFT

7.2 Fire Insurance Maps

Historically maps were produced which showed the location and use of structures on a property at a given point in time. These maps were widely available for areas that were significantly developed during the late 1800s through the 1950s, though coverage exists for some areas through the 1990s. BBG attempted to obtain historical maps from EDR, Inc. covering the Property. No historical Sanborn maps were identified. The "no coverage" notification is included in Appendix 5.

7.3 Property Tax Files

Tax files are files kept for property tax purposes by the local jurisdiction where the property is located and may include records of past ownership, appraisals, maps, sketches, and photographs. BBG reviewed the property tax files for the Property available on line from the Ventura County Assessor's office. No significant historical use information was provided. No indications of environmental concern were noted.

7.4 Recorded Land Title Records

Land title records are records of historical fee ownership, which may include leases, land contracts and AULs on or of the property recorded in the place where land title records are, by law or custom, recorded for the local jurisdiction in which the property is located, often such records are kept by a municipal or county recorder or clerk. Such records may be obtained from title companies or directly from the local government agency. A chain-of-title was not provided to BBG for review.

7.5 Historical USGS Topographic Maps

Historical topographic maps can indicate whether an area is undeveloped, lightly developed or heavily developed. They can also indicate if roads, railroad tracks, quarrying operations or water bodies were previously or near a property. No historical topographic maps were reviewed as part of this assessment due to the sufficient prior use history obtained through the other standard historical sources.

7.6 Local Street Directories

Local street directories identify the name of the individual or company located at a given address. BBG attempted to access local street directories at the Moorpark City Library (699 Moorpark Avenue). No local street directories were available.

7.7 Building Department Records

Building department records generally consist of local government records indicating permission of the local government to construct, alter, or demolish improvements on the property. Often building department records are located in the building department of a municipality or county. No records for the Property were identified from the Moorpark Building and Safety Division.

7.8 Zoning/Land Use Records

Zoning or land use records generally consist of local government records indicating the uses permitted by the local government in particular zones within its jurisdiction. The records may consist of maps and/or written records. The records are often located in the planning department of a municipality or county. BBG reviewed zoning/land use records for the Property at the City of Moorpark offices. Based on these records, the Property is zoned M-2.

7.9 Previous Assessment/Reports

BBG was not provided any previous reports for the Property.

DRAFT

7.10 Other Historical Sources

Other historical sources include sources that are credible to a reasonable person and that identify past uses of the Property. This category includes, but is not limited to: miscellaneous maps, newspaper archives, internet sites, community organizations, local libraries, historical societies, current owners or occupants of neighboring properties, or records in the files and/or personal knowledge of the property owner and/or occupants. BBG did not review other historical sources for the Property based on prior use history obtained through the other standard historical sources.

7.11 Data Failure

Based on the information above, it is BBG's opinion that the following data failures, as defined in Section 8.3.2.3 of the ASTM guidelines, have occurred in attempting to document the historical uses of the Property:

- While BBG was able to document the historical uses of the Property back prior to 1940, the Property was already developed at the earliest documented source. Given that the prior use was agricultural, this data failure is not considered a significant data gap.

- Some of the intervals between documented sources exceeded five years; however, based on the similar usage during the periods documented, this data failure is not considered a significant data gap.

Neither of the data failures affected the ability of the Environmental Professionals involved in this assessment to identify RECs in connection with the Property; therefore, they are not considered significant data gaps.

7.12 Historical Use Summary

The Property was developed as a citrus orchard since the late 1930s until the late 1950s / early 1960s when the orchard was removed. The Property has remained undeveloped.

The surrounding properties have been mainly agricultural land and orchards since the late 1930s. The west adjoining industrial facility was developed in the mid-late 1980s.

The Property has a history of use as citrus orchard. A wide variety of pesticides, including those containing persistent compounds such as lead, arsenic and DDT, along with related organochlorine and organophosphate pesticides, may have been used during this period. No information was obtained indicating evidence of improper storage, disposal or application of these materials and a review of available aerial photographs did not show improvements such as hangars, runways or large barns that would indicate significant storage, formulation and handling of these materials. The Property is currently vacant. Planned redevelopment does not include residential use and will result in some homogenization of surface soils, Property coverage with

DRAFT

building and paving, and Property service by a municipal drinking water supply. While detectable levels of the persistent compounds associated with the historical use of the orchard may still be present upon redevelopment, the historical agricultural usage is not considered a REC.

Railroad tracks have historically been located adjacent to the north of the Property and are surrounded by gravel. Based on the presence of gravel, the use of oils, arsenic, and herbicides associated with weed or pest control is expected to be minimal, and therefore does not represent a significant environmental concern.

No prior usage of the Property or adjoining properties was identified that would be considered a REC for the Property.

DRAFT

8.0 PROPERTY RECONNAISSANCE AND INVESTIGATION

8.1 Methodology and Limiting Conditions

Assessor:	Matt Hohne The Assessor's qualifications are included in Appendix 6.
Date of Reconnaissance:	May 2, 2018
Weather Conditions:	Overcast with temperatures around 60 degrees Fahrenheit
Property Escort:	Unescorted
Methodology:	The property reconnaissance consisted of visual observations of the Property, adjoining properties, as viewed from the Property boundaries, and the surrounding area based on visual observations made from adjacent public thoroughfares.
Areas Accessed:	BBG accessed the entire site.
Inaccessible Areas:	No areas were inaccessible during the assessment.
Other Limitations:	No other significant limitations or physical obstructions were encountered during the property reconnaissance.

8.2 Visual Observations

OBSERVATION	YES	NO
Hazardous Substance and Petroleum Products in Connection with Identified Uses		X
Hazardous Substance and Petroleum Products in Connection with Unidentified Uses		X
Drums and Containers of Unidentified Substance or Petroleum Products		X
Aboveground and Underground Storage Tanks		X
Strong, Pungent or Noxious Odors		X
Pools of Liquids		X
Electrical or Hydraulic Equipment likely to Contain Fluids		X
Heating and Cooling Source		X
Interior Stains or Corrosion other than from Water		X
Floor Drains, Sumps, Clarifiers and Oil/Water Separators		X
Pits, Ponds and Lagoons		X
Exterior Stained Soils or Pavement		X

DRAFT

OBSERVATION	YES	NO
Stressed Vegetation		X
Onsite Solid Waste Disposal or Unknown Fill		X
Wastewater		X
Wells		X
Septic Systems and Cesspools		X

8.3 Visual Observations Summary

No visual, olfactory or other observations were made during the property reconnaissance that would indicate a REC in connection with the Property.

DRAFT

9.0 ASTM NON-SCOPE CONSIDERATIONS

9.1 Asbestos Containing Materials (ACM)

Asbestos is a mineral fiber that has been used commonly in a variety of building construction materials for insulation and as a fire-retardant. Because of its fiber strength and heat resistant properties, asbestos was used in roofing shingles, ceiling and floor tiles, insulation products, asbestos cement products, and a host of other building materials. ACM is often classified as either friable or non-friable. Friable ACM, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Non-friable ACM can be crumbled, pulverized, or reduced to powder during machining, cutting, drilling, or other abrasive procedures. When asbestos-containing materials are damaged or disturbed by repair, remodeling or demolition activities, microscopic fibers become airborne and can be inhaled into the lungs, where they can cause significant health problems. Friable ACM is more likely to release fibers when disturbed or damaged than non-friable ACM.

No buildings are present on the Property; therefore, ACM is not considered a concern.

9.2 Radon

Radon is a naturally occurring colorless, odorless gas that is a by-product of the decay of radioactive materials potentially present in bedrock and soil. The USEPA guidance action level for annual residential exposure to radon is 4.0 picoCuries per liter of air (pCi/L). The guidance action level is not a regulatory requirement for private owners of commercial real estate, but is commonly used for comparison purposes to suggest whether further action at a building may be prudent.

A preliminary evaluation of the potential for concerns relating to radon was made using the USEPA Map of Radon Zones. The USEPA Map is based solely on averages in order to identify areas in the country with the potential for elevated indoor radon levels. Elevated levels of radon have been found in all radon zones. A finding that a property is located in a zone with predicted levels of radon below the USEPA action level does not mean a specific property does not have elevated levels of radon. The evaluation considered the location of the Property, previous test results, if available, type of construction and usage of the Property.

The Property is located in Zone 1, counties which have a predicted average indoor radon screening level greater than the USEPA action level of 4pCi/L. The Property is not used residentially. The USEPA's action level applies to residential, not commercial, properties. Based on the non-residential use, radon is not considered a BER.

DRAFT

9.3 Lead-Based Paint (LBP)

Lead was added to paint as a pigment, to speed drying, increase durability or to resist moisture. Although lead improves paint, it was found to pose a health hazard, particularly to children under the age of six, whose bodies are still developing. A paint is considered LBP if it contains lead equal to or exceeding 1.0 milligram per square centimeter or 0.5 percent by weight, or 5,000 parts per million (ppm) by weight.

No buildings are present on the Property; therefore, LBP is not considered a BER in connection with the Property.

9.4 Drinking Water

The potential for concerns relating to elevated levels of contaminants, particularly lead, was evaluated. The evaluation looked at the source of drinking water and analytical data, if available.

The Property is currently undeveloped; therefore, drinking water is not a concern. Once the Property is developed it will receive its drinking water from Ventura County Water Works District No. 1. Per the most recent Annual Water Quality Report, the water that will be supplied meets or exceeds the federal and state drinking water standards, including those for lead; therefore, drinking water quality is not considered a BER.

9.5 Microbial Growth

Molds are usually not a problem indoors, unless mold spores land on a wet or damp spot and begin growing. Molds have the potential to cause health problems. Molds produce allergens (substances that can cause allergic reactions), irritants, and in some cases, potentially toxic substances (mycotoxins). Inhaling or touching mold or mold spores may cause allergic reactions in sensitive individuals. Allergic responses include hay fever-type symptoms, such as sneezing, runny nose, red eyes, and skin rash (dermatitis). Allergic reactions to mold are common. They can be immediate or delayed. Molds can also cause asthma attacks in people with asthma who are allergic to mold. In addition, mold exposure can irritate the eyes, skin, nose, throat, and lungs of both mold-allergic and non-allergic people. Symptoms other than the allergic and irritant types are not commonly reported as a result of inhaling mold. Research on mold and health effects is ongoing.

No buildings are present on the Property; therefore, microbial growth is not considered a BER in connection with the Property.

9.6 Flood Zone and Wetlands

BBG attempted to determine if the Property was located in a flood hazard area or contained jurisdictional wetlands. This screening was based solely on a review of available FEMA Flood

DRAFT

Insurance Rate Maps (FIRM) and the United States Fish and Wildlife Service National Wetlands Inventory (NWI) website. This screening should not be considered a formal flood hazard determination or wetlands delineation.

Based on information provided by FEMA, the Property is located in Zone X Unshaded, defined as areas of minimal flood hazard and Zone X Shaded, defined as areas of moderate flood hazard, usually the area between the limits of the 100-year and 500-year floods, or areas protected by levees from 100-year flood, or shallow flooding areas with average depths of less than one foot or drainage areas less than 1 square mile.

No federally regulated wetlands are located on the Property, based on the United States Fish & Wildlife Service National Wetlands Inventory website.

9.7 ASTM Non-Scope Consideration Summary

BBG did not identify any BERs associated with the ASTM non-scope considerations included in this assessment.

DRAFT

10.0 FINDINGS, OPINIONS, CONCLUSIONS AND RECOMMENDATIONS

10.1 Findings, Opinions and Conclusions

BBG has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527 of Vacant Land, California 118, Moorpark, California, the Property. Any exceptions to, or deletions from, this practice are described in Section 11 of this report. This assessment has revealed no evidence of RECs in connection with the Property.

A de minimis condition is a condition that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. This assessment has revealed no evidence of de minimis conditions.

An historical recognized environmental condition (HREC) refers to an environmental condition which would have been considered a REC in the past, but which is no longer considered a REC based on subsequent assessment and/or remediation of any contaminants to below the most restrictive (generally residential) cleanup target concentrations or regulatory closure with no formal or implied restricted uses. The assessment has revealed no evidence of HRECs in connection with the Property.

No significant data gaps were identified that would affect the ability of the environmental professional to identify RECs at the Property.

The ASTM Standard was designed solely to meet the requirements of the USEPA's All Appropriate Inquiries (AAI) to permit the potential purchaser to satisfy one of the requirements to qualify for the innocent landowner, contiguous property owner, or bona fide prospective purchaser limitations on CERCLA liability. It is possible for there to be business environmental risks (BERs) related to ASTM scope considerations that do not meet the definition of a REC. This assessment has revealed no evidence of BERs associated with the standard ASTM scope considerations.

At the request of Client, BBG conducted a preliminary evaluation for asbestos-containing material (ACM), radon, lead-based paint (LBP), drinking water quality, mold, floodplains and wetland which are ASTM non-scope considerations. This assessment has revealed no evidence of BERs relating to these ASTM non-scope considerations.

10.2 Recommendations

No further action is recommended based on the information available as of the date of this report.

DRAFT

11.0 DEVIATIONS AND ADDITIONAL SERVICES

The following items deviated from the ASTM 1527-13 Standard:

- The Standard offers a "Recommended Table of Contents and Report Format." While BBG's report includes all of the information required by the Standard, BBG did not follow the recommend table of contents and report format for all sections of the report.

- The Standard only requires that the preparer of the report determine the presence of RECs, CRECs and HRECs, if any, or data gaps that prevent a conclusion regarding the presence of RECs, CRECs and HRECs being made. At the request of Client, BBG has included recommendations in this report.

- At the request of Client asbestos-containing materials, radon, lead-based paint, drinking water quality, and mold were addressed in this ESA. These are considered Non-Scope Considerations by the Standard.

- At the request of Client, a preliminary evaluation was made to determine if the Property was located in a flood plain or if portions of the Property could be classified as wetlands. These are considered Non-Scope Considerations by the Standard.

- The results of additional inquiries required under section 312.22 of 40 CFR 312 and Section 6 of the ASTM Standard were not provided to BBG. All appropriate inquiry does not require submission of this information to the environmental professional.

DRAFT

12.0 DECLARATION OF ENVIRONMENTAL PROFESSIONAL

We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professional as defined in §312.10 of 40 CFR 312.

We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the Property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Prepared By:



Matt Hohne
Senior Project Manager

Reviewed By:



Aaron Klenke
Director

DRAFT

13.0 DETAILED SCOPE OF WORK

This ESA was conducted in accordance with ASTM *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* E1527-13 (Standard), the All Appropriate Inquiries (AAI) Rule 40 CFR Part 312, and any additional requirements of Client.

The scope of services for this assessment included an evaluation of the following:

- Physical characteristics – Consistent with Section 8.2.4 of the ASTM Standard Practice, a current USGS 7.5 Minute Topographic Map (or equivalent) showing the area on which the property is located shall be reviewed. It is the only standard physical setting source and the only physical setting source that is required to be obtained (and only if it is reasonably ascertainable). One or more additional physical setting sources may be obtained in the discretion of the environmental professional. Because such sources provide information about the geologic, hydrogeologic, hydrologic, or topographic characteristics of a site, discretionary physical setting sources shall be sought when deemed necessary by the environmental professional.

- Environmental Records – Consistent with Section 8.2.1 of the ASTM Standard Practice, a review of the standard federal, state and tribal environmental records will be reviewed. Pursuant to Section 8.2.3 of the ASTM Standard Practice, additional local records and/or additional federal, state, or tribal records shall be checked when, in the judgment of the environmental professional, such additional records (1) are reasonably ascertainable, (2) are sufficiently useful, accurate, and complete in light of the objective of the records review, and (3) are generally obtained, pursuant to local good commercial and customary practice, in initial environmental site assessments in the type of commercial real estate transaction involved. If the property or any of the adjoining properties is identified on one or more of the standard environmental record sources, pertinent regulatory files and/or records associated with the listing will be reviewed provided the records are reasonably ascertainable and are available within a reasonable distance, cost and timeframe. If, in the environmental professional's opinion, such a review is not warranted, the environmental professional will provide an explanation within the report the justification for not conducting the regulatory file review.

- Uses of the Property – Consistent with Section 8.3.2 of the ASTM Standard Practice, all obvious uses of the property shall be identified from the present, back to the property's first developed use, or back to 1940, whichever is earlier. This task requires reviewing only as many of the standard historical sources in 8.3.4.1 through 8.3.4.8 as are necessary and both reasonably ascertainable and likely to be useful. The term "developed use" includes agricultural uses and placement of fill dirt. The report shall describe all identified uses, justify the earliest date identified, and explain the reason for any gaps in the history of use. Review of standard historical sources at less than approximately five year intervals is not required by this practice (for example, if the property had one use in 1950 and another use in 1955, it is not required to check for a third use in the intervening

DRAFT

period). If the specific use of the property appears unchanged over a period longer than five years, then it is not required by this practice to research the use during that period.

- Site Reconnaissance – Consistent with Sections 9.2.1 and 9.2.2 of the ASTM Standard Practice, on a visit to the property (the site visit), the property shall be visually and/or physically observed and any structure(s) located on the property to the extent not obstructed by bodies of water, adjacent buildings, or other obstacles shall be observed. The periphery of the property shall be visually and/or physically observed, as well as the periphery of all structures on the property, and the property shall be viewed from all adjacent public thoroughfares. If roads or paths with no apparent outlet are observed on the property, the use of the road or path shall be identified to determine whether it was likely to have been used as an avenue for disposal of hazardous substances or petroleum products. On the interior of structures on the property, accessible common areas expected to be used by occupants or the public (such as lobbies, hallways, utility rooms, recreation areas, etc.), maintenance and repair areas, including boiler rooms, and a representative sample of occupant spaces, shall be visually and/or physically observed. It is not necessary to look under floors, above ceilings, or behind walls.

The ASTM Standard Practice recognizes that there may be environmental issues or conditions at a property that parties may wish to consider. These are considered ASTM Non-Scope Considerations. The following ASTM non-scope considerations were included:

- Asbestos Containing Material (ACM) - The potential for the presence of ACM was evaluated based on the age of the improvements, dates of renovation, and other relevant information. Appendix G of the USEPA Guidance Document: *Managing Asbestos in Place - A Building Owner's Guide to Operations and Maintenance Programs for Asbestos-Containing Materials* (the Green Book) was used as a guide in identifying suspect materials and the definition of suspect ACM and presumed asbestos containing material is taken from 29 CRF Parts 1910, et al. *Occupational Exposure to Asbestos; Final Rule*. Only readily accessible building materials were observed. No destructive means were utilized to gain access to hidden or inaccessible areas such as pipe chases, wet columns, wall voids and ceiling cavities. The level of this preliminary assessment was not intended to comply with the survey requirements of the Asbestos Hazard Emergency Response Act (AHERA) 40 CFR Part 763, National Emission Standard for Hazardous Air Pollutants (NESHAP) 40 CFR 61; the General Duty Clause, 29 USC 654, Section 5; or other federal, state or local regulation.

- Radon – The potential for elevated levels of indoor radon was based on available analytical results, published regional average levels, the usage of the buildings, and the type of construction and mechanical systems present. This evaluation was not designed or intended to comply with any regulatory agency requirements. Sampling, if any, was conducted using short-term radon detectors. The results of such testing are intended solely as a screen and may not be indicative of long-term average radon levels.

- Lead-Based Paint (LBP) – The potential for the presence of LBP at the property was based on available analytical data, the age of the improvements, dates of renovation, and the current and proposed usage of the property. This evaluation was not designed or intended to comply with survey

DRAFT

requirements outlined in Housing and Urban Development (HUD) regulations or other federal, state or local regulation.

- Lead in Drinking Water – The potential for elevated levels of lead in the drinking water at the property was based on available analytical data, a determination of the source of the drinking water supply and a review of publically available compliance data reports.

- Microbial Growth – The potential for microbial growth at the property was based on visual observations for signs of water intrusion, water damage, and suspect mold growth and interviews with property representatives. These observations were limited to the areas walked and should not be considered a comprehensive survey of the Property. A finding in this report that "mold is not a significant concern" or "no significant mold was identified" should not be interpreted as the building is free of mold.

- Flood Plains and Wetlands - Evaluation based solely on a review of available Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM), or equivalent, and the United States Fish and Wildlife Service National Wetlands Inventory website. This screening should not be considered a formal flood hazard determination or wetlands delineation.

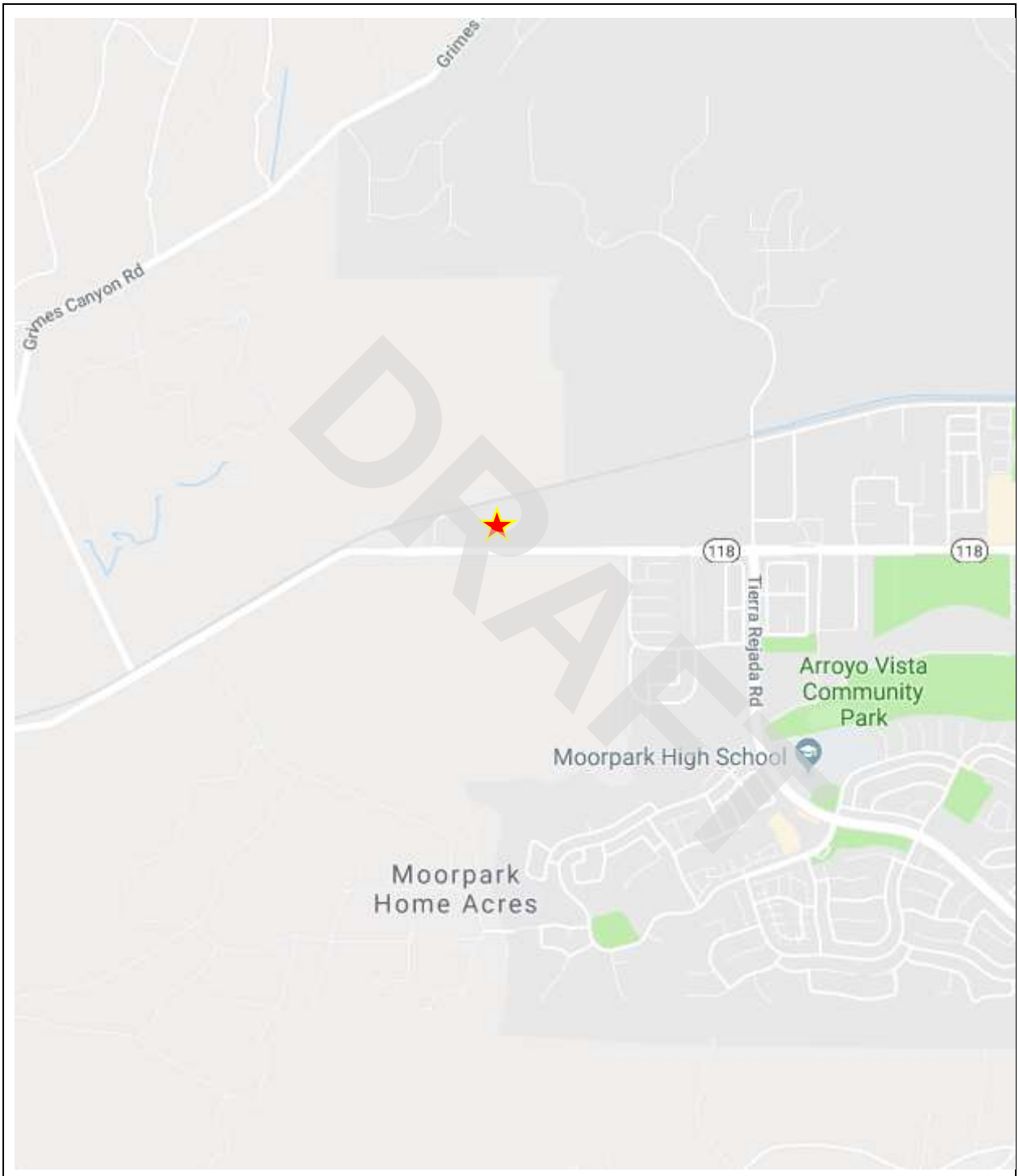
DRAFT

DRAFT

APPENDIX 1

PROPERTY MAPS AND DIAGRAMS

BBG



Property Location

Map Source – Google Maps

N

BBG



PROPERTY DIAGRAM

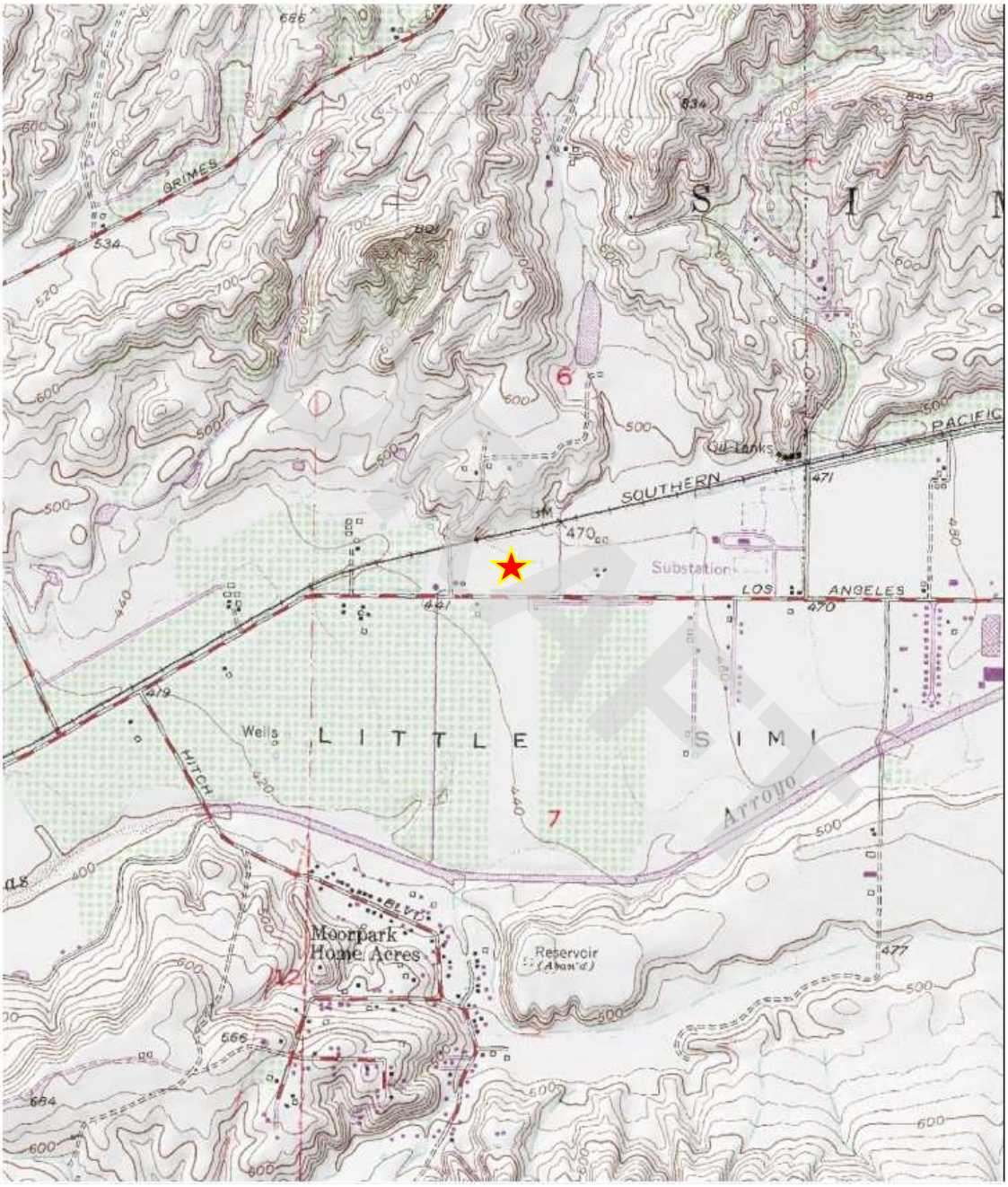
Map Source – Google Maps

N

Vacant Land
California 118
Moorpark, California 93021

BBG PROJECT NO.: 0518001002

BBG



TOPOGRAPHIC MAP

Moorpark, CA Quad, 7.5-minute series - 1987

N

Vacant Land
California 118
Moorpark, California 93021

BBG PROJECT NO.: 0518001002

DRAFT

APPENDIX 2

PHOTOGRAPHS



1. Property, facing northeast



2. Property, facing north



3. Property, facing northwest



4. Property, facing west



5. Property, facing southwest



6. Property, facing south

DRAFT



7. Property, facing southwest



8. Property, facing northwest



9. North adjoining railroad tracks



10. South adjoining water pipeline



11. South adjoining water channel, facing west



12. South adjoining water channel, facing east

DRAFT



13. North adjoining property



14. East adjoining property



15. South adjoining property, across Los Angeles Avenue



16. West adjoining property

DRAFT

DRAFT

APPENDIX 3

SUPPORTING DOCUMENTATION

APPENDIX 4

Regulatory Database Report

DRAFT

California 118
California 118
Moorpark, CA 93021

Inquiry Number: 6729552.2s
November 01, 2021

DRAFT

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

SECTION	PAGE
Executive Summary	ES1
Overview Map	2
Detail Map	3
Map Findings Summary	4
Map Findings	9
Orphan Summary	81
Government Records Searched/Data Currency Tracking	GR-1

GEOCHECK ADDENDUM

Physical Setting Source Addendum	A-1
Physical Setting Source Summary	A-2
Physical Setting SSURGO Soil Map	A-5
Physical Setting Source Map	A-17
Physical Setting Source Map Findings	A-19
Physical Setting Source Records Searched	PSGR-1

DRAFT

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2020 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

CALIFORNIA 118
MOORPARK, CA 93021

COORDINATES

Latitude (North):	34.2799350 - 34° 16' 47.76''
Longitude (West):	118.9123950 - 118° 54' 44.62''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	323959.8
UTM Y (Meters):	3794655.0
Elevation:	452 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5630753 MOORPARK, CA
Version Date:	2012

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140531
Source:	USDA

DRAFT

MAPPED SITES SUMMARY

Target Property Address:
CALIFORNIA 118
MOORPARK, CA 93021

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	PENTAIR WATER POOL A	10951 W LOS ANGELES	CERS HAZ WASTE, CERS TANKS, NPDES, CIWQS, CERS	Lower	426, 0.081, West
A2	QUIJADA TRUCKING	10951 LOS ANGELES AV	RCRA NonGen / NLR	Lower	426, 0.081, West
A3	PENTAIR WATER POOL A	10951 W. LOS ANGELES	RCRA-LQG	Lower	426, 0.081, West
A4	KDI AMERICAN PRODUCT	10951 W LOS ANGELES	RCRA-SQG	Lower	426, 0.081, West
B5	J. D. MCGRATH FARMS	11015 W LOS ANGELES	HIST UST	Higher	692, 0.131, ESE
B6	M & C	11015 LOS ANGELES AV	HIST UST, HAZNET, HWTS	Higher	692, 0.131, ESE
B7		11018 LOS ANGELES AV	AST	Higher	712, 0.135, ESE
B8	MURANAKA FARM ARROYO	11018 E LOS ANGELES	AST, CERS HAZ WASTE, CERS TANKS, VENTURA CO. BWT,..	Higher	712, 0.135, ESE
C9	MURANAKA FARM INC	11128 E LOS ANGELES	RCRA NonGen / NLR	Higher	1023, 0.194, ESE
C10	MURANKA FARM INC	11128 LOS ANGELES AV	RCRA-SQG, FINDS, ECHO	Higher	1023, 0.194, ESE
11	PEACH HILL ORGANIC R	10765 LOS ANGELES AV	SWF/LF, CERS HAZ WASTE, CERS TANKS, VENTURA CO....	Lower	1694, 0.321, WNW
12	PEACH HILL ORGANIC R		LOS ANGELES CO LF METHANE	Lower	1821, 0.345, WSW
13	VIKING ELECTRONICS I	5455 ENDEAVOUR CT	ENVIROSTOR, WDS	Higher	5153, 0.976, ENE

DRAFT

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ---------- National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY ---------- Federal Facility Site Information listing
SEMS ---------- Superfund Enterprise Management System

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE ---------- Superfund Enterprise Management System Archive

Federal RCRA CORRACTS facilities list

CORRACTS ---------- Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-VSQG ---------- RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

Federal institutional controls / engineering controls registries

LUCIS ---------- Land Use Control Information System
US ENG CONTROLS ---------- Engineering Controls Sites List
US INST CONTROLS ---------- Institutional Controls Sites List

DRAFT

EXECUTIVE SUMMARY

Federal ERNS list

ERNS ---------- Emergency Response Notification System

State- and tribal - equivalent NPL

RESPONSE ---------- State Response Sites

State and tribal leaking storage tank lists

LUST ---------- Geotracker's Leaking Underground Fuel Tank Report
INDIAN LUST ---------- Leaking Underground Storage Tanks on Indian Land
CPS-SLIC ---------- Statewide SLIC Cases

State and tribal registered storage tank lists

FEMA UST ---------- Underground Storage Tank Listing
UST ---------- Active UST Facilities
INDIAN UST ---------- Underground Storage Tanks on Indian Land

State and tribal voluntary cleanup sites

INDIAN VCP ---------- Voluntary Cleanup Priority Listing
VCP ---------- Voluntary Cleanup Program Properties

State and tribal Brownfields sites

BROWNFIELDS ---------- Considered Brownfieds Sites Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ---------- A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT ---------- Waste Management Unit Database
SWRCY ---------- Recycler Database
HAULERS ---------- Registered Waste Tire Haulers Listing
INDIAN ODI ---------- Report on the Status of Open Dumps on Indian Lands
ODI ---------- Open Dump Inventory
DEBRIS REGION 9 ---------- Torres Martinez Reservation Illegal Dump Site Locations
IHS OPEN DUMPS ---------- Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL ---------- Delisted National Clandestine Laboratory Register
HIST Cal-Sites ---------- Historical Calsites Database
SCH ---------- School Property Evaluation Program
CDL ---------- Clandestine Drug Labs
Toxic Pits ---------- Toxic Pits Cleanup Act Sites
US CDL ---------- National Clandestine Laboratory Register

DRAFT

AQUEOUS FOAM ..... Former Fire Training Facility Assessments Listing
PFAS ..... PFAS Contamination Site Location Listing

Local Lists of Registered Storage Tanks

SWEEPS UST ..... SWEEPS UST Listing
CA FID UST ..... Facility Inventory Database

Local Land Records

LIENS ..... Environmental Liens Listing
LIENS 2 ..... CERCLA Lien Information
DEED ..... Deed Restriction Listing

Records of Emergency Release Reports

HMIRS ..... Hazardous Materials Information Reporting System
CHMIRS ..... California Hazardous Material Incident Report System
LDS ..... Land Disposal Sites Listing
MCS ..... Military Cleanup Sites Listing
SPILLS 90 ..... SPILLS 90 data from FirstSearch

Other Ascertainable Records

FUDS ..... Formerly Used Defense Sites
DOD ..... Department of Defense Sites
SCRD DRYCLEANERS ..... State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR ..... Financial Assurance Information
EPA WATCH LIST ..... EPA WATCH LIST
2020 COR ACTION ..... 2020 Corrective Action Program List
TSCA ..... Toxic Substances Control Act
TRIS ..... Toxic Chemical Release Inventory System
SSTS ..... Section 7 Tracking Systems
ROD ..... Records Of Decision
RMP ..... Risk Management Plans
RAATS ..... RCRA Administrative Action Tracking System
PRP ..... Potentially Responsible Parties
PADS ..... PCB Activity Database System
ICIS ..... Integrated Compliance Information System
FTTS ..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS ..... Material Licensing Tracking System
COAL ASH DOE ..... Steam-Electric Plant Operation Data
COAL ASH EPA ..... Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER ..... PCB Transformer Registration Database
RADINFO ..... Radiation Information Database
HIST FTTS ..... FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS ..... Incident and Accident Data
CONSENT ..... Superfund (CERCLA) Consent Decrees
INDIAN RESERV ..... Indian Reservations
FUSRAP ..... Formerly Utilized Sites Remedial Action Program
UMTRA ..... Uranium Mill Tailings Sites
LEAD SMELTERS ..... Lead Smelter Sites
US AIRS ..... Aerometric Information Retrieval System Facility Subsystem
US MINES ..... Mines Master Index File

DRAFT

EXECUTIVE SUMMARY

ABANDONED MINES	Abandoned Mines
FINDS	Facility Index System/Facility Registry System
UXO	Unexploded Ordnance Sites
ECHO	Enforcement & Compliance History Information
DOCKET HWC	Hazardous Waste Compliance Docket Listing
FUELS PROGRAM	EPA Fuels Program Registered Listing
CA BOND EXP. PLAN	Bond Expenditure Plan
VENTURA CO. BWT	Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
Cortese	"Cortese" Hazardous Waste & Substances Sites List
CUPA Listings	CUPA Resources List
DRYCLEANERS	Cleaner Facilities
EMI	Emissions Inventory Data
ENF	Enforcement Action Listing
Financial Assurance	Financial Assurance Information Listing
HAZNET	Facility and Manifest Data
ICE	ICE
HIST CORTESE	Hazardous Waste & Substance Site List
HWP	EnviroStor Permitted Facilities Listing
HWT	Registered Hazardous Waste Transporter Database
MED WASTE VENTURA	Medical Waste Program List
MINES	Mines Site Location Listing
MWMP	Medical Waste Management Program Listing
NPDES	NPDES Permits Listing
PEST LIC	Pesticide Regulation Licenses Listing
PROC	Certified Processors Database
Notify 65	Proposition 65 Records
UIC	UIC Listing
UIC GEO	UIC GEO (GEOTRACKER)
WASTEWATER PITS	Oil Wastewater Pits Listing
WDS	Waste Discharge System
WIP	Well Investigation Program Case List
MILITARY PRIV SITES	MILITARY PRIV SITES (GEOTRACKER)
PROJECT	PROJECT (GEOTRACKER)
WDR	Waste Discharge Requirements Listing
CIWQS	California Integrated Water Quality System
CERS	CERS
NON-CASE INFO	NON-CASE INFO (GEOTRACKER)
OTHER OIL GAS	OTHER OIL & GAS (GEOTRACKER)
PROD WATER PONDS	PROD WATER PONDS (GEOTRACKER)
SAMPLING POINT	SAMPLING POINT (GEOTRACKER)
WELL STIM PROJ	Well Stimulation Project (GEOTRACKER)
MINES MRDS	Mineral Resources Data System
HWTS	Hazardous Waste Tracking System

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP	EDR Proprietary Manufactured Gas Plants
EDR Hist Auto	EDR Exclusive Historical Auto Stations
EDR Hist Cleaner	EDR Exclusive Historical Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF	Recovered Government Archive Solid Waste Facilities List

DRAFT

EXECUTIVE SUMMARY

RGA LUST---------- Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

Federal RCRA generators list

RCRA-LQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

A review of the RCRA-LQG list, as provided by EDR, and dated 09/13/2021 has revealed that there is 1 RCRA-LQG site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
PENTAIR WATER POOL A EPA ID:: CAL000201053	10951 W. LOS ANGELES	W 0 - 1/8 (0.081 mi.)	A3	38

RCRA-SQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

A review of the RCRA-SQG list, as provided by EDR, and dated 09/13/2021 has revealed that there are 2 RCRA-SQG sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
MURANKA FARM INC EPA ID:: CAD983599002	***11128 LOS ANGELES AV***	***ESE 1/8 - 1/4 (0.194 mi.)***	***C10***	***62***

Lower Elevation	Address	Direction / Distance	Map ID	Page
KDI AMERICAN PRODUCT EPA ID:: CAD982371247	10951 W LOS ANGELES	W 0 - 1/8 (0.081 mi.)	A4	42

DRAFT

State- and tribal - equivalent CERCLIS

ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 07/22/2021 has revealed that there is 1 ENVIROSTOR site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
VIKING ELECTRONICS I	***5455 ENDEAVOUR CT***	***ENE 1/2 - 1 (0.976 mi.)***	***13***	***78***
Facility Id: 71003350				
Status: Refer: Other Agency				

State and tribal landfill and/or solid waste disposal site lists

SWF/LF: The Solid Waste Facilities/Landfill Sites records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. The data come from the Integrated Waste Management Board's Solid Waste Information System (SWIS) database.

A review of the SWF/LF list, as provided by EDR, has revealed that there is 1 SWF/LF site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
PEACH HILL ORGANIC R	***10765 LOS ANGELES AV***	***WNW 1/4 - 1/2 (0.321 mi.)***	***11***	***66***
Database: LOS ANGELES CO. LF, Date of Government Version: 07/09/2021				
Database: SWF/LF (SWIS), Date of Government Version: 05/10/2021				
Facility ID: 56-AA-0142				
Site ID: 2706				
Status: Active				
Operational Status: Active				
Regulation Status: Notification				

State and tribal registered storage tank lists

AST: A listing of aboveground storage tank petroleum storage tank locations.

A review of the AST list, as provided by EDR, has revealed that there are 2 AST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
Not reported	11018 LOS ANGELES AV	ESE 1/8 - 1/4 (0.135 mi.)	B7	49
Database: AST, Date of Government Version: 07/06/2016				

DRAFT

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
MURANAKA FARM ARROYO	***11018 E LOS ANGELES***	***ESE 1/8 - 1/4 (0.135 mi.)***	***B8***	***50***
Database: AST, Date of Government Version: 07/06/2016				

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Hazardous waste / Contaminated Sites

CERS HAZ WASTE: List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA LQ HW Generator programs.

A review of the CERS HAZ WASTE list, as provided by EDR, and dated 07/15/2021 has revealed that there are 2 CERS HAZ WASTE sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
MURANAKA FARM ARROYO	***11018 E LOS ANGELES***	***ESE 1/8 - 1/4 (0.135 mi.)***	***B8***	***50***
Lower Elevation	**Address**	**Direction / Distance**	**Map ID**	**Page**
PENTAIR WATER POOL A	***10951 W LOS ANGELES***	***W 0 - 1/8 (0.081 mi.)***	***A1***	***9***

Local Lists of Registered Storage Tanks

HIST UST: Historical UST Registered Database.

A review of the HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there are 2 HIST UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
J. D. MCGRATH FARMS Facility Id: 00000009354	11015 W LOS ANGELES	ESE 1/8 - 1/4 (0.131 mi.)	B5	46
M & C	***11015 LOS ANGELES AV***	***ESE 1/8 - 1/4 (0.131 mi.)***	***B6***	***47***

CERS TANKS: List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Aboveground Petroleum Storage and Underground Storage Tank regulatory programs.

A review of the CERS TANKS list, as provided by EDR, and dated 07/15/2021 has revealed that there are 2 CERS TANKS sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
MURANAKA FARM ARROYO	***11018 E LOS ANGELES***	***ESE 1/8 - 1/4 (0.135 mi.)***	***B8***	***50***
Lower Elevation	**Address**	**Direction / Distance**	**Map ID**	**Page**
PENTAIR WATER POOL A	***10951 W LOS ANGELES***	***W 0 - 1/8 (0.081 mi.)***	***A1***	***9***

DRAFT

Other Ascertainable Records

RCRA NonGen / NLR: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

A review of the RCRA NonGen / NLR list, as provided by EDR, and dated 09/13/2021 has revealed that there are 2 RCRA NonGen / NLR sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
MURANAKA FARM INC EPA ID:: CAL000449307	11128 E LOS ANGELES	ESE 1/8 - 1/4 (0.194 mi.)	C9	60

Lower Elevation	Address	Direction / Distance	Map ID	Page
QUIJADA TRUCKING EPA ID:: CAC002978352	10951 LOS ANGELES AV	W 0 - 1/8 (0.081 mi.)	A2	36

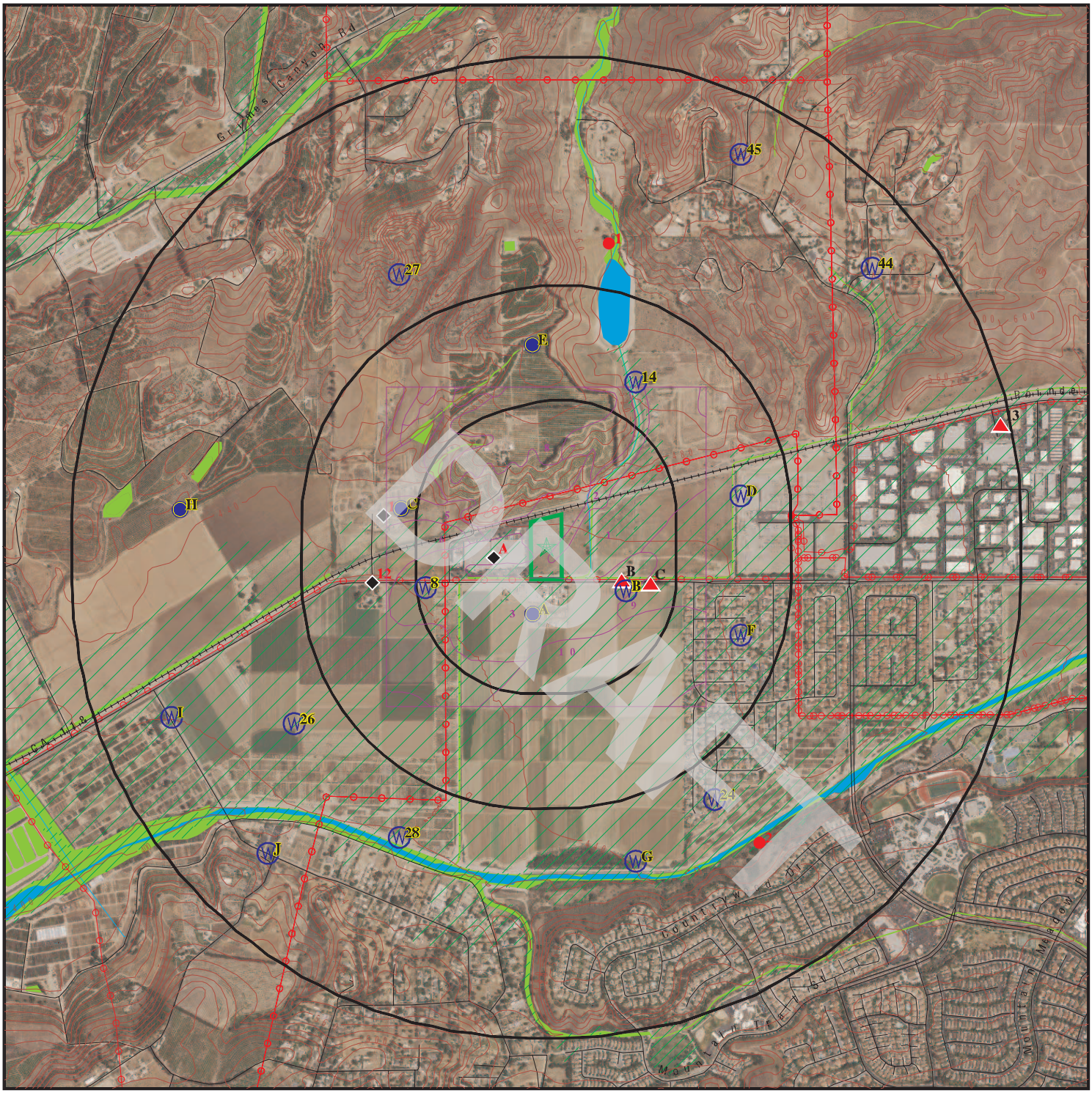
DRAFT

EXECUTIVE SUMMARY

There were no unmapped sites in this report.

DRAFT

OVERVIEW MAP - 6729552.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	California 118	CLIENT:	BBG Assessment Inc.
ADDRESS:	California 118 Moorpark CA 93021	CONTACT:	Haley Zeigler
		INQUIRY #:	6729552.2s
LAT/LONG:	34.279935 / 118.912395	DATE:	November 01, 2021 2:20 pm

Copyright © 2021 EDR, Inc. © 2015 TomTom Rel. 2015.

DETAIL MAP - 6729552.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/16 1/8 1/4 Miles

Indian Reservations BIA

Power transmission lines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	California 118	CLIENT:	BBG Assessment Inc.
ADDRESS:	California 118 Moorpark CA 93021	CONTACT:	Haley Zeigler
		INQUIRY #:	6729552.2s
LAT/LONG:	34.279935 / 118.912395	DATE:	November 01, 2021 2:22 pm

Copyright © 2021 EDR, Inc. © 2015 TomTom Rel. 2015.

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	1.000		0	0	0	0	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		1	0	NR	NR	NR	1
RCRA-SQG	0.250		1	1	NR	NR	NR	2
RCRA-VSQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROLS	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	0.001		0	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
RESPONSE	1.000		0	0	0	0	NR	0
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	1.000		0	0	0	1	NR	1
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	1	NR	NR	1
State and tribal leaking storage tank lists								
LUST	0.500		0	0	0	NR	NR	0

DRAFT

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
INDIAN LUST	0.500		0	0	0	NR	NR	0
CPS-SLIC	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		0	2	NR	NR	NR	2
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal voluntary cleanup sites								
INDIAN VCP	0.500		0	0	0	NR	NR	0
VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	0.001		0	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	0.001		0	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
CDL	0.001		0	NR	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
CERS HAZ WASTE	0.250		1	1	NR	NR	NR	2
US CDL	0.001		0	NR	NR	NR	NR	0
AQUEOUS FOAM	TP		NR	NR	NR	NR	NR	0
PFAS	0.500		0	0	0	NR	NR	0
Local Lists of Registered Storage Tanks								
SWEEPS UST	0.250		0	0	NR	NR	NR	0
HIST UST	0.250		0	2	NR	NR	NR	2
CERS TANKS	0.250		1	1	NR	NR	NR	2
CA FID UST	0.250		0	0	NR	NR	NR	0
Local Land Records								
LIENS	0.001		0	NR	NR	NR	NR	0

DRAFT

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
LIENS 2	0.001		0	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	0.001		0	NR	NR	NR	NR	0
CHMIRS	0.001		0	NR	NR	NR	NR	0
LDS	0.001		0	NR	NR	NR	NR	0
MCS	0.001		0	NR	NR	NR	NR	0
SPILLS 90	0.001		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		1	1	NR	NR	NR	2
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	0.001		0	NR	NR	NR	NR	0
EPA WATCH LIST	0.001		0	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	0.001		0	NR	NR	NR	NR	0
TRIS	0.001		0	NR	NR	NR	NR	0
SSTS	0.001		0	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	0.001		0	NR	NR	NR	NR	0
RAATS	0.001		0	NR	NR	NR	NR	0
PRP	0.001		0	NR	NR	NR	NR	0
PADS	0.001		0	NR	NR	NR	NR	0
ICIS	0.001		0	NR	NR	NR	NR	0
FTTS	0.001		0	NR	NR	NR	NR	0
MLTS	0.001		0	NR	NR	NR	NR	0
COAL ASH DOE	0.001		0	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	0.001		0	NR	NR	NR	NR	0
RADINFO	0.001		0	NR	NR	NR	NR	0
HIST FTTS	0.001		0	NR	NR	NR	NR	0
DOT OPS	0.001		0	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	0.001		0	NR	NR	NR	NR	0
US AIRS	0.001		0	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
FINDS	0.001		0	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
ECHO	0.001		0	NR	NR	NR	NR	0
DOCKET HWC	0.001		0	NR	NR	NR	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
VENTURA CO. BWT	0.001		0	NR	NR	NR	NR	0
Cortese	0.500		0	0	0	NR	NR	0

DRAFT

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
CUPA Listings	0.250		0	0	NR	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
EMI	0.001		0	NR	NR	NR	NR	0
ENF	0.001		0	NR	NR	NR	NR	0
Financial Assurance	0.001		0	NR	NR	NR	NR	0
HAZNET	0.001		0	NR	NR	NR	NR	0
ICE	0.001		0	NR	NR	NR	NR	0
HIST CORTESE	0.500		0	0	0	NR	NR	0
HWP	1.000		0	0	0	0	NR	0
HWT	0.250		0	0	NR	NR	NR	0
MED WASTE VENTURA	0.001		0	NR	NR	NR	NR	0
MINES	0.250		0	0	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
NPDES	0.001		0	NR	NR	NR	NR	0
PEST LIC	0.001		0	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
UIC	0.001		0	NR	NR	NR	NR	0
UIC GEO	0.001		0	NR	NR	NR	NR	0
WASTEWATER PITS	0.500		0	0	0	NR	NR	0
WDS	0.001		0	NR	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
MILITARY PRIV SITES	0.001		0	NR	NR	NR	NR	0
PROJECT	0.001		0	NR	NR	NR	NR	0
WDR	0.001		0	NR	NR	NR	NR	0
CIWQS	0.001		0	NR	NR	NR	NR	0
CERS	0.001		0	NR	NR	NR	NR	0
NON-CASE INFO	0.001		0	NR	NR	NR	NR	0
OTHER OIL GAS	0.001		0	NR	NR	NR	NR	0
PROD WATER PONDS	0.001		0	NR	NR	NR	NR	0
SAMPLING POINT	0.001		0	NR	NR	NR	NR	0
WELL STIM PROJ	0.001		0	NR	NR	NR	NR	0
MINES MRDS	0.001		0	NR	NR	NR	NR	0
HWTS	TP		NR	NR	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	0.001		0	NR	NR	NR	NR	0
RGA LUST	0.001		0	NR	NR	NR	NR	0
- Totals --		0	5	8	1	1	0	15

DRAFT

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

DRAFT

A1 **PENTAIR WATER POOL AND SPA** **CERS HAZ WASTE** **S113015608**
West **10951 W LOS ANGELES AVE** **CERS TANKS** **N/A**
< 1/8 **MOORPARK, CA 93021** **NPDES**
0.081 mi. **CIWQS**
426 ft. **Site 1 of 4 in cluster A** **CERS**

Relative:
Lower

Actual:
448 ft.

CERS HAZ WASTE:

Name:	PENTAIR WATER POOL AND SPA
Address:	10951 W LOS ANGELES AVE
City,State,Zip:	MOORPARK, CA 93021
Site ID:	399251
CERS ID:	10332370
CERS Description:	Hazardous Waste Onsite Treatment

Name:	PENTAIR WATER POOL AND SPA
Address:	10951 W LOS ANGELES AVE
City,State,Zip:	MOORPARK, CA 93021
Site ID:	399251
CERS ID:	10332370
CERS Description:	Hazardous Waste Generator

Name:	PENTAIR WATER POOL AND SPA
Address:	10951 W LOS ANGELES AVE
City,State,Zip:	MOORPARK, CA 93021
Site ID:	399251
CERS ID:	10332370
CERS Description:	RCRA LQ HW Generator

CERS TANKS:

Name:	PENTAIR WATER POOL AND SPA
Address:	10951 W LOS ANGELES AVE
City,State,Zip:	MOORPARK, CA 93021
Site ID:	399251
CERS ID:	10332370
CERS Description:	Aboveground Petroleum Storage

NPDES:

Name:	PENTAIR WATER POOL AND SPA
Address:	10951 W LOS ANGELES AVE
City,State,Zip:	MOORPARK, CA 93021
Facility Status:	Active
NPDES Number:	CAS000001
Region:	4
Agency Number:	0
Regulatory Measure ID:	435805
Place ID:	Not reported
Order Number:	97-03-DWQ
WDID:	4 56I024137
Regulatory Measure Type:	Enrollee
Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	03/13/2013
Termination Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Discharge Address:	10951 W Los Angeles Ave
Discharge Name:	Pentair Water Pool and Spa
Discharge City:	Moorpark
Discharge State:	California

DRAFT

PENTAIR WATER POOL AND SPA (Continued) **S113015608**

Discharge Zip:	93021
Status:	Not reported
Status Date:	Not reported
Operator Name:	Not reported
Operator Address:	Not reported
Operator City:	Not reported
Operator State:	Not reported
Operator Zip:	Not reported

NPDES as of 03/2018:

NPDES Number:	CAS000001
Status:	Active
Agency Number:	0
Region:	4
Regulatory Measure ID:	435805
Order Number:	97-03-DWQ
Regulatory Measure Type:	Enrollee
Place ID:	Not reported
WDID:	4 56I024137
Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	03/13/2013
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Pentair Water Pool and Spa
Discharge Address:	10951 W Los Angeles Ave
Discharge City:	Moorpark
Discharge State:	California
Discharge Zip:	93021
Received Date:	Not reported
Processed Date:	Not reported
Status:	Not reported
Status Date:	Not reported
Place Size:	Not reported
Place Size Unit:	Not reported
Contact:	Not reported
Contact Title:	Not reported
Contact Phone:	Not reported
Contact Phone Ext:	Not reported
Contact Email:	Not reported
Operator Name:	Not reported
Operator Address:	Not reported
Operator City:	Not reported
Operator State:	Not reported
Operator Zip:	Not reported
Operator Contact:	Not reported
Operator Contact Title:	Not reported
Operator Contact Phone:	Not reported
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	Not reported
Operator Type:	Not reported
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	Not reported
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported

DRAFT

PENTAIR WATER POOL AND SPA (Continued) **S113015608**

Constype Linear Utility Ind:	Not reported
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	Not reported
Receiving Water Name:	Not reported
Certifier:	Not reported
Certifier Title:	Not reported
Certification Date:	Not reported
Primary Sic:	Not reported
Secondary Sic:	Not reported
Tertiary Sic:	Not reported
NPDES Number:	Not reported
Status:	Not reported
Agency Number:	Not reported
Region:	4
Regulatory Measure ID:	435805
Order Number:	Not reported
Regulatory Measure Type:	Industrial
Place ID:	Not reported
WDID:	4 56I024137
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Received Date:	03/13/2013
Processed Date:	03/13/2013
Status:	Active
Status Date:	10/15/2015
Place Size:	234000
Place Size Unit:	SqFt
Contact:	Jeff Corse
Contact Title:	EHS Coordinator
Contact Phone:	805-553-5300
Contact Phone Ext:	Not reported

DRAFT

PENTAIR WATER POOL AND SPA (Continued) **S113015608**

Contact Email:	jeffrey.corse@pentair.com
Operator Name:	Pentair Water Pool and Spa
Operator Address:	10951 W Los Angeles Ave
Operator City:	Moorpark
Operator State:	California
Operator Zip:	93021
Operator Contact:	Jeff Corse
Operator Contact Title:	EHS Coordinator
Operator Contact Phone:	805-553-5300
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	jeffrey.corse@pentair.com
Operator Type:	Private Business
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	California
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	805-990-9285
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	N
Receiving Water Name:	Somis Creek
Certifier:	Badaoui Mouderres
Certifier Title:	Manager
Certification Date:	16-JUL-16
Primary Sic:	3999-Manufacturing Industries, NEC
Secondary Sic:	Not reported
Tertiary Sic:	Not reported

Name:	PENTAIR WATER POOL AND SPA
Address:	10951 W LOS ANGELES AVE
City,State,Zip:	MOORPARK, CA 93021
Facility Status:	Not reported
NPDES Number:	Not reported
Region:	Not reported
Agency Number:	Not reported
Regulatory Measure ID:	Not reported
Place ID:	Not reported

DRAFT

PENTAIR WATER POOL AND SPA (Continued) **S113015608**

Order Number:	Not reported
WDID:	4 56I024137
Regulatory Measure Type:	Industrial
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Discharge Address:	Not reported
Discharge Name:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Status:	Active
Status Date:	10/15/2015
Operator Name:	Pentair Water Pool and Spa
Operator Address:	10951 W Los Angeles Ave
Operator City:	Moorpark
Operator State:	California
Operator Zip:	93021

NPDES as of 03/2018:

NPDES Number:	CAS000001
Status:	Active
Agency Number:	0
Region:	4
Regulatory Measure ID:	435805
Order Number:	97-03-DWQ
Regulatory Measure Type:	Enrollee
Place ID:	Not reported
WDID:	4 56I024137
Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	03/13/2013
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Pentair Water Pool and Spa
Discharge Address:	10951 W Los Angeles Ave
Discharge City:	Moorpark
Discharge State:	California
Discharge Zip:	93021
Received Date:	Not reported
Processed Date:	Not reported
Status:	Not reported
Status Date:	Not reported
Place Size:	Not reported
Place Size Unit:	Not reported
Contact:	Not reported
Contact Title:	Not reported
Contact Phone:	Not reported
Contact Phone Ext:	Not reported
Contact Email:	Not reported
Operator Name:	Not reported
Operator Address:	Not reported
Operator City:	Not reported
Operator State:	Not reported
Operator Zip:	Not reported
Operator Contact:	Not reported

DRAFT

PENTAIR WATER POOL AND SPA (Continued) **S113015608**

Operator Contact Title:	Not reported
Operator Contact Phone:	Not reported
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	Not reported
Operator Type:	Not reported
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	Not reported
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	Not reported
Receiving Water Name:	Not reported
Certifier:	Not reported
Certifier Title:	Not reported
Certification Date:	Not reported
Primary Sic:	Not reported
Secondary Sic:	Not reported
Tertiary Sic:	Not reported
NPDES Number:	Not reported
Status:	Not reported
Agency Number:	Not reported
Region:	4
Regulatory Measure ID:	435805
Order Number:	Not reported
Regulatory Measure Type:	Industrial
Place ID:	Not reported
WDID:	4 56I024137
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported

DRAFT

PENTAIR WATER POOL AND SPA (Continued) **S113015608**

Discharge State:	Not reported
Discharge Zip:	Not reported
Received Date:	03/13/2013
Processed Date:	03/13/2013
Status:	Active
Status Date:	10/15/2015
Place Size:	234000
Place Size Unit:	SqFt
Contact:	Jeff Corse
Contact Title:	EHS Coordinator
Contact Phone:	805-553-5300
Contact Phone Ext:	Not reported
Contact Email:	jeffrey.corse@pentair.com
Operator Name:	Pentair Water Pool and Spa
Operator Address:	10951 W Los Angeles Ave
Operator City:	Moorpark
Operator State:	California
Operator Zip:	93021
Operator Contact:	Jeff Corse
Operator Contact Title:	EHS Coordinator
Operator Contact Phone:	805-553-5300
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	jeffrey.corse@pentair.com
Operator Type:	Private Business
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	California
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	805-990-9285
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	N
Receiving Water Name:	Somis Creek
Certifier:	Badaoui Mouderres
Certifier Title:	Manager
Certification Date:	16-JUL-16
Primary Sic:	3999-Manufacturing Industries, NEC
Secondary Sic:	Not reported

DRAFT

PENTAIR WATER POOL AND SPA (Continued) **S113015608**

Tertiary Sic: Not reported

CIWQS:
Name: PENTAIR WATER POOL AND SPA
Address: 10951 W LOS ANGELES AVE
City,State,Zip: MOORPARK, CA 93021
Agency: Pentair Water Pool and Spa
Agency Address: 10951 W Los Angeles Ave, Moorpark, CA 93021
Place/Project Type: Industrial - Manufacturing Industries, NEC
SIC/NAICS: 3999
Region: 4
Program: INDSTW
Regulatory Measure Status: Active
Regulatory Measure Type: Storm water industrial
Order Number: 2014-0057-DWQ
WDID: 4 56I024137
NPDES Number: CAS000001
Adoption Date: Not reported
Effective Date: 03/13/2013
Termination Date: Not reported
Expiration/Review Date: Not reported
Design Flow: Not reported
Major/Minor: Not reported
Complexity: Not reported
TTWQ: Not reported
Enforcement Actions within 5 years: 0
Violations within 5 years: 0
Latitude: 34.28066
Longitude: -118.91356

CERS:
Name: PENTAIR WATER POOL AND SPA
Address: 10951 W LOS ANGELES AVE
City,State,Zip: MOORPARK, CA 93021
Site ID: 399251
CERS ID: 10332370
CERS Description: Chemical Storage Facilities

Violations:
Site ID: 399251
Site Name: PENTAIR WATER POOL AND SPA
Violation Date: 06-23-2017
Citation: HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Description: Failure to implement the SPCC Plan.
Violation Notes: Returned to compliance on 07/20/2017.
Violation Division: Ventura County Environmental Health
Violation Program: APSA
Violation Source: CERS

Site ID: 399251
Site Name: PENTAIR WATER POOL AND SPA
Violation Date: 05-11-2015
Citation: 22 CCR 15 66265.195(a) - California Code of Regulations, Title 22, Chapter 15, Section(s) 66265.195(a)
Violation Description: Failure of the owner or operator to conduct inspections and maintain

DRAFT

PENTAIR WATER POOL AND SPA (Continued) **S113015608**

inspection records at the facility of the following tank equipment: 1) Overfill/spill control equipment (e.g., waste-feed cutoff systems, bypass systems, and drainage systems) to ensure that it is in good working order; 2) The aboveground portions of the tank system, if any, to detect corrosion or releases of waste; 3) Data gathered from monitoring equipment and leak-detection equipment, (e.g., pressure and temperature gauges, monitoring wells) to ensure that the tank system is being operated according to its design; 4) The construction materials and the area immediately surrounding the externally accessible portion of the tank system including secondary containment structures (e.g., dikes) to detect erosion or signs of releases of hazardous waste (e.g., wet spots, dead vegetation); and 5) For uncovered tanks, the level of waste in the tank, to ensure compliance with section 66265.194(b)(3).

Violation Notes: Returned to compliance on 06/01/2015.
Violation Division: Ventura County Environmental Health
Violation Program: HW
Violation Source: CERS

Site ID: 399251
Site Name: PENTAIR WATER POOL AND SPA
Violation Date: 06-23-2017
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Description: Failure to complete and electronically submit a site map with all required content.
Violation Notes: Returned to compliance on 07/20/2017.
Violation Division: Ventura County Environmental Health
Violation Program: HMRRP
Violation Source: CERS

Site ID: 399251
Site Name: PENTAIR WATER POOL AND SPA
Violation Date: 06-23-2017
Citation: HSC 6.95 25508.1(a)-(f) - California Health and Safety Code, Chapter 6.95, Section(s) 25508.1(a)-(f)
Violation Description: Failure to electronically update business plan within 30 days of any one of the following events: A 100 percent or more increase in the quantity of a previously disclosed material. Any handling of a previously undisclosed hazardous materials at or above reportable quantities. A change of business address, business ownership, or business name. A substantial change in the handler's operations that requires modification to any portion of the business plan.
Violation Notes: Returned to compliance on 07/20/2017.
Violation Division: Ventura County Environmental Health
Violation Program: HMRRP
Violation Source: CERS

Site ID: 399251
Site Name: PENTAIR WATER POOL AND SPA
Violation Date: 05-08-2019
Citation: 22 CCR 45 67450.13(a)(1) - California Code of Regulations, Title 22, Chapter 45, Section(s) 67450.13(a)(1)
Violation Description: Failure to prepare a written estimate of the cost of closing each unit which includes the cost that would be incurred for closing a treatment unit when using the owner or operator or generator's own staff and/or personal equipment taking into account any salvage value that may be

DRAFT

PENTAIR WATER POOL AND SPA (Continued) **S113015608**

realized from the sale of wastes, facility structure or equipment, land or other facility assets. This estimate shall be submitted as an attachment to the Certification of Financial Assurance for Permit by Rule and Conditionally Authorized Operations/ Maintenance page(s) of the Unified Program Consolidated Form (x/99)).

Violation Notes: Returned to compliance on 06/19/2019.
Violation Division: Ventura County Environmental Health
Violation Program: PBR
Violation Source: CERS

Site ID: 399251
Site Name: PENTAIR WATER POOL AND SPA
Violation Date: 06-23-2017
Citation: 22 CCR 45 67450.2(c)(10) - California Code of Regulations, Title 22, Chapter 45, Section(s) 67450.2(c)(10)
Violation Description: Failure of the owner or operator of a fixed treatment unit (FTU), upon request by the CUPA or authorized agency, to prepare, and submit to CUPA a complete annual report detailing treatment activities conducted during the calendar year preceding the request.
Violation Notes: Returned to compliance on 06/23/2017.
Violation Division: Ventura County Environmental Health
Violation Program: PBR
Violation Source: CERS

Site ID: 399251
Site Name: PENTAIR WATER POOL AND SPA
Violation Date: 05-11-2015
Citation: HSC 6.95 25508.1(a)-(e) - California Health and Safety Code, Chapter 6.95, Section(s) 25508.1(a)-(e)
Violation Description: Failure to electronically update business plan within 30 days of any one of the following events: A 100 percent or more increase in the quantity of a previously disclosed material. Any handling of a previously undisclosed hazardous materials at or above reportable quantities. A change of business address, business ownership, or business name.
Violation Notes: Returned to compliance on 06/10/2015.
Violation Division: Ventura County Environmental Health
Violation Program: HMRRP
Violation Source: CERS

Site ID: 399251
Site Name: PENTAIR WATER POOL AND SPA
Violation Date: 05-08-2019
Citation: HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Description: Failure to prepare a Spill Prevention, Control, and Countermeasures (SPCC) Plan.
Violation Notes: Returned to compliance on 06/26/2019.
Violation Division: Ventura County Environmental Health
Violation Program: APSA
Violation Source: CERS

Site ID: 399251
Site Name: PENTAIR WATER POOL AND SPA
Violation Date: 05-08-2019
Citation: HSC 6.95 25508.1(a)-(f) - California Health and Safety Code, Chapter 6.95, Section(s) 25508.1(a)-(f)

DRAFT

PENTAIR WATER POOL AND SPA (Continued) **S113015608**

Violation Description:	Failure to electronically update business plan within 30 days of any one of the following events: A 100 percent or more increase in the quantity of a previously disclosed material. Any handling of a previously undisclosed hazardous materials at or above reportable quantities. A change of business address, business ownership, or business name. A substantial change in the handler's operations that requires modification to any portion of the business plan.
Violation Notes:	Returned to compliance on 06/27/2019.
Violation Division:	Ventura County Environmental Health
Violation Program:	HMRRP
Violation Source:	CERS
Site ID:	399251
Site Name:	PENTAIR WATER POOL AND SPA
Violation Date:	12-12-2013
Citation:	22 CCR 45 67450.3(c)(8) - California Code of Regulations, Title 22, Chapter 45, Section(s) 67450.3(c)(8)
Violation Description:	Failure to maintain, reproduce, and provide the following documents at the facility where the FTU is operating: 1) The waste analysis plan for the treatment operation; 2) The written inspection schedule; 3) All training documents; 4) The contingency plan; 5) A copy of the most recent treatment notification and a copy of the most recent acknowledgement received from the Department, CUPA or authorized agency; 6) A copy of any local Air District permit and other permits required for the operation of the FTU; 7) A copy of the closure plan; 8) A copy of documents related to the environmental investigation and any cleanup, abatement or other necessary remedial action taken; and 9) Documentation of any convictions, judgments, settlements, or orders resulting from any action by any local, State, or federal environmental or public health enforcement agency concerning the operation of the facility within the last three years, as the documents would be available under the California Public Records Act.
Violation Notes:	Returned to compliance on 12/12/2013.
Violation Division:	Ventura County Environmental Health
Violation Program:	PBR
Violation Source:	CERS
Site ID:	399251
Site Name:	PENTAIR WATER POOL AND SPA
Violation Date:	05-08-2019
Citation:	22 CCR 15 66265.193 - California Code of Regulations, Title 22, Chapter 15, Section(s) 66265.193
Violation Description:	Failure to meet required secondary containment requirements for hazardous waste tank systems or components.
Violation Notes:	Returned to compliance on 06/19/2019.
Violation Division:	Ventura County Environmental Health
Violation Program:	HW
Violation Source:	CERS
Site ID:	399251
Site Name:	PENTAIR WATER POOL AND SPA
Violation Date:	05-08-2019
Citation:	22 CCR 15 66265.16 - California Code of Regulations, Title 22, Chapter 15, Section(s) 66265.16
Violation Description:	Failure to provide employees with hazardous waste training program of class room instructions or on-the-job training within the first six months after the date of their employment or assignment to a facility,

DRAFT

PENTAIR WATER POOL AND SPA (Continued) **S113015608**

or to a new position at a facility and annually thereafter. Training records on current personnel shall be kept until closure of the facility and for former employees the record shall be kept for at least three years from the date the employee last worked at the facility. The records shall include the following: the job title for each position at the facility related to hazardous waste management, and the name of the employee filling each job; a written job description for each position, duties of facility personnel assigned to each position, and a written description of the type and amount of both introductory and continuing training that will be given to each person filling a position.

Violation Notes: Returned to compliance on 06/18/2019.
Violation Division: Ventura County Environmental Health
Violation Program: HW
Violation Source: CERS

Site ID: 399251
Site Name: PENTAIR WATER POOL AND SPA
Violation Date: 05-11-2015
Citation: 22 CCR 12 66262.34(a) - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.34(a)
Violation Description: Failure to obtain a permit or grant of interim status to accumulate hazardous waste longer than 90 days.
Violation Notes: Returned to compliance on 06/01/2015.
Violation Division: Ventura County Environmental Health
Violation Program: HW
Violation Source: CERS

Site ID: 399251
Site Name: PENTAIR WATER POOL AND SPA
Violation Date: 05-11-2015
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Description: Failure to establish and electronically submit an adequate training program in safety procedures in the event of a release or threatened release of a hazardous material.
Violation Notes: Returned to compliance on 06/01/2015.
Violation Division: Ventura County Environmental Health
Violation Program: HMRRP
Violation Source: CERS

Site ID: 399251
Site Name: PENTAIR WATER POOL AND SPA
Violation Date: 12-12-2013
Citation: 22 CCR 45 67450.3(c)(7) - California Code of Regulations, Title 22, Chapter 45, Section(s) 67450.3(c)(7)
Violation Description: Failure to permanently mark the exterior of each Fixed TU with the name of the person which owns or operates the FTU, facility identification number and an individual serial number.
Violation Notes: Returned to compliance on 12/12/2013.
Violation Division: Ventura County Environmental Health
Violation Program: PBR
Violation Source: CERS

Site ID: 399251
Site Name: PENTAIR WATER POOL AND SPA
Violation Date: 05-11-2015

DRAFT

PENTAIR WATER POOL AND SPA (Continued) **S113015608**

Citation: 22 CCR 12 66262.34(f) - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.34(f)
Violation Description: Failure to properly label hazardous waste accumulation containers with the following requirements: "Hazardous Waste", name and address of the generator, physical and chemical characteristics of the Hazardous Waste, and starting accumulation date.
Violation Notes: Returned to compliance on 06/01/2015.
Violation Division: Ventura County Environmental Health
Violation Program: HW
Violation Source: CERS

Site ID: 399251
Site Name: PENTAIR WATER POOL AND SPA
Violation Date: 05-11-2015
Citation: 40 CFR 1 265.35 - U.S. Code of Federal Regulations, Title 40, Chapter 1, Section(s) 265.35
Violation Description: Failure to maintain aisle space to allow the unobstructed movement of personnel, fire protection, spill control equipment, and decontamination equipment to any area of facility operation in an emergency, unless it can be demonstrated to the Department that aisle space is not needed for any of these purposes.
Violation Notes: Returned to compliance on 06/01/2015.
Violation Division: Ventura County Environmental Health
Violation Program: HW
Violation Source: CERS

Evaluation:
Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-11-2015
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Ventura County Environmental Health
Eval Program: PBR
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-19-2015
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: FOLLOW-UP QA/QC
Eval Division: Ventura County Environmental Health
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-23-2017
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Ventura County Environmental Health
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-08-2019
Violations Found: Yes

DRAFT

PENTAIR WATER POOL AND SPA (Continued) **S113015608**

Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	Ventura County Environmental Health
Eval Program:	HMRRP
Eval Source:	CERS
Eval General Type:	Case Development Inspection
Eval Date:	10-05-2015
Violations Found:	No
Eval Type:	Industrial Storm Water Enforcement Follow-up
Eval Notes:	the purpose of the inspection was to notify Pentair Water Pool and Spa that the mandatory recertification to enroll the facility under the new Statewide Industrial General Stormwater Permit was not completed by the August 15, 2015 due date.
Eval Division:	Water Boards
Eval Program:	INDSTW
Eval Source:	SMARTS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	05-08-2019
Violations Found:	Yes
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	Ventura County Environmental Health
Eval Program:	HW
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	05-11-2015
Violations Found:	Yes
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	Ventura County Environmental Health
Eval Program:	HW
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	06-19-2015
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	FOLLOW-UP QA/QC
Eval Division:	Ventura County Environmental Health
Eval Program:	HW
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	06-23-2017
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	Ventura County Environmental Health
Eval Program:	HW
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	06-23-2017
Violations Found:	Yes

DRAFT

PENTAIR WATER POOL AND SPA (Continued) **S113015608**

Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Ventura County Environmental Health
Eval Program: APSA
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-23-2017
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Ventura County Environmental Health
Eval Program: PBR
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 12-12-2013
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Ventura County Environmental Health
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-08-2019
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Ventura County Environmental Health
Eval Program: APSA
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-08-2019
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Ventura County Environmental Health
Eval Program: PBR
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-11-2015
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Ventura County Environmental Health
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 12-12-2013
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Ventura County Environmental Health

DRAFT

PENTAIR WATER POOL AND SPA (Continued) **S113015608**

Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 12-12-2013
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Ventura County Environmental Health
Eval Program: PBR
Eval Source: CERS

Coordinates:
Site ID: 399251
Facility Name: PENTAIR WATER POOL AND SPA
Env Int Type Code: HMBP
Program ID: 10332370
Coord Name: Not reported
Ref Point Type Desc: Center of a facility or station.
Latitude: 34.279680
Longitude: -118.914400

Affiliation:
Affiliation Type Desc: Facility Mailing Address
Entity Name: Mailing Address
Entity Title: Not reported
Affiliation Address: 10951 W LOS ANGELES AVE
Affiliation City: MOORPARK
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 93021
Affiliation Phone: Not reported

Affiliation Type Desc: Identification Signer
Entity Name: Andy Freeman
Entity Title: Maintenance Manager
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: Operator
Entity Name: Andy Freeman
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: (805) 553-5041

Affiliation Type Desc: Document Preparer
Entity Name: BADAOUI MOUDERRES
Entity Title: Not reported

DRAFT

PENTAIR WATER POOL AND SPA (Continued) **S113015608**

Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Parent Corporation
Entity Name:	PENTAIR POOL PRODUCTS
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	CUPA District
Entity Name:	Ventura County Environmental Health
Entity Title:	Not reported
Affiliation Address:	800 South Victoria Avenue
Affiliation City:	Ventura
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	93009
Affiliation Phone:	(805) 654-2813
Affiliation Type Desc:	Onsite Treatment Unit Owner Operator
Entity Name:	Andy Freeman
Entity Title:	Facilities Manager
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Environmental Contact
Entity Name:	Badaoui Mouderres
Entity Title:	Not reported
Affiliation Address:	2144 E. Ojai Avenue
Affiliation City:	Ojai
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	93023
Affiliation Phone:	Not reported
Affiliation Type Desc:	Legal Owner
Entity Name:	PENTAIR WATER POOL AND SPA
Entity Title:	Not reported
Affiliation Address:	10951 W LOS ANGELES AVE
Affiliation City:	MOORPARK
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	93021
Affiliation Phone:	(805) 553-5500

DRAFT

PENTAIR WATER POOL AND SPA (Continued) **S113015608**

Affiliation Type Desc: Onsite Treatment Unit Owner Operator
Entity Name: Antonio Valencia
Entity Title: Facilities Supervisor
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: Owner/Operator
Entity Name: Pentair Water Pool and Spa
Entity Title: Operator
Affiliation Address: 10951 W Los Angeles Ave
Affiliation City: Moorpark
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 93021
Affiliation Phone: Not reported

Name: PENTAIR WATER POOL AND SPA
Address: 10951 W LOS ANGELES AVE
City,State,Zip: MOORPARK, CA 93021
Site ID: 399251
CERS ID: 822002
CERS Description: Industrial Facility Storm Water

Violations:
Site ID: 399251
Site Name: PENTAIR WATER POOL AND SPA
Violation Date: 06-23-2017
Citation: HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Description: Failure to implement the SPCC Plan.
Violation Notes: Returned to compliance on 07/20/2017.
Violation Division: Ventura County Environmental Health
Violation Program: APSA
Violation Source: CERS

Site ID: 399251
Site Name: PENTAIR WATER POOL AND SPA
Violation Date: 05-11-2015
Citation: 22 CCR 15 66265.195(a) - California Code of Regulations, Title 22, Chapter 15, Section(s) 66265.195(a)
Violation Description: Failure of the owner or operator to conduct inspections and maintain inspection records at the facility of the following tank equipment: 1) Overfill/spill control equipment (e.g., waste-feed cutoff systems, bypass systems, and drainage systems) to ensure that it is in good working order; 2) The aboveground portions of the tank system, if any, to detect corrosion or releases of waste; 3) Data gathered from monitoring equipment and leak-detection equipment, (e.g., pressure and temperature gauges, monitoring wells) to ensure that the tank system is being operated according to its design; 4) The construction materials and the area immediately surrounding the externally accessible portion of the tank system including secondary containment structures (e.g., dikes) to detect erosion or signs of releases of hazardous waste (e.g., wet spots, dead vegetation); and 5) For

DRAFT

PENTAIR WATER POOL AND SPA (Continued) **S113015608**

uncovered tanks, the level of waste in the tank, to ensure compliance with section 66265.194(b)(3).
Violation Notes: Returned to compliance on 06/01/2015.
Violation Division: Ventura County Environmental Health
Violation Program: HW
Violation Source: CERS

Site ID: 399251
Site Name: PENTAIR WATER POOL AND SPA
Violation Date: 06-23-2017
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Description: Failure to complete and electronically submit a site map with all required content.
Violation Notes: Returned to compliance on 07/20/2017.
Violation Division: Ventura County Environmental Health
Violation Program: HMRRP
Violation Source: CERS

Site ID: 399251
Site Name: PENTAIR WATER POOL AND SPA
Violation Date: 06-23-2017
Citation: HSC 6.95 25508.1(a)-(f) - California Health and Safety Code, Chapter 6.95, Section(s) 25508.1(a)-(f)
Violation Description: Failure to electronically update business plan within 30 days of any one of the following events: A 100 percent or more increase in the quantity of a previously disclosed material. Any handling of a previously undisclosed hazardous materials at or above reportable quantities. A change of business address, business ownership, or business name. A substantial change in the handler's operations that requires modification to any portion of the business plan.
Violation Notes: Returned to compliance on 07/20/2017.
Violation Division: Ventura County Environmental Health
Violation Program: HMRRP
Violation Source: CERS

Site ID: 399251
Site Name: PENTAIR WATER POOL AND SPA
Violation Date: 05-08-2019
Citation: 22 CCR 45 67450.13(a)(1) - California Code of Regulations, Title 22, Chapter 45, Section(s) 67450.13(a)(1)
Violation Description: Failure to prepare a written estimate of the cost of closing each unit which includes the cost that would be incurred for closing a treatment unit when using the owner or operator or generator's own staff and/or personal equipment taking into account any salvage value that may be realized from the sale of wastes, facility structure or equipment, land or other facility assets. This estimate shall be submitted as an attachment to the Certification of Financial Assurance for Permit by Rule and Conditionally Authorized Operations/ Maintenance page(s) of the Unified Program Consolidated Form (x/99)).
Violation Notes: Returned to compliance on 06/19/2019.
Violation Division: Ventura County Environmental Health
Violation Program: PBR
Violation Source: CERS

Site ID: 399251
Site Name: PENTAIR WATER POOL AND SPA

DRAFT

PENTAIR WATER POOL AND SPA (Continued) **S113015608**

Violation Date:	06-23-2017
Citation:	22 CCR 45 67450.2(c)(10) - California Code of Regulations, Title 22, Chapter 45, Section(s) 67450.2(c)(10)
Violation Description:	Failure of the owner or operator of a fixed treatment unit (FTU), upon request by the CUPA or authorized agency, to prepare, and submit to CUPA a complete annual report detailing treatment activities conducted during the calendar year preceding the request.
Violation Notes:	Returned to compliance on 06/23/2017.
Violation Division:	Ventura County Environmental Health
Violation Program:	PBR
Violation Source:	CERS
Site ID:	399251
Site Name:	PENTAIR WATER POOL AND SPA
Violation Date:	05-11-2015
Citation:	HSC 6.95 25508.1(a)-(e) - California Health and Safety Code, Chapter 6.95, Section(s) 25508.1(a)-(e)
Violation Description:	Failure to electronically update business plan within 30 days of any one of the following events: A 100 percent or more increase in the quantity of a previously disclosed material. Any handling of a previously undisclosed hazardous materials at or above reportable quantities. A change of business address, business ownership, or business name.
Violation Notes:	Returned to compliance on 06/10/2015.
Violation Division:	Ventura County Environmental Health
Violation Program:	HMRRP
Violation Source:	CERS
Site ID:	399251
Site Name:	PENTAIR WATER POOL AND SPA
Violation Date:	05-08-2019
Citation:	HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Description:	Failure to prepare a Spill Prevention, Control, and Countermeasures (SPCC) Plan.
Violation Notes:	Returned to compliance on 06/26/2019.
Violation Division:	Ventura County Environmental Health
Violation Program:	APSA
Violation Source:	CERS
Site ID:	399251
Site Name:	PENTAIR WATER POOL AND SPA
Violation Date:	05-08-2019
Citation:	HSC 6.95 25508.1(a)-(f) - California Health and Safety Code, Chapter 6.95, Section(s) 25508.1(a)-(f)
Violation Description:	Failure to electronically update business plan within 30 days of any one of the following events: A 100 percent or more increase in the quantity of a previously disclosed material. Any handling of a previously undisclosed hazardous materials at or above reportable quantities. A change of business address, business ownership, or business name. A substantial change in the handler's operations that requires modification to any portion of the business plan.
Violation Notes:	Returned to compliance on 06/27/2019.
Violation Division:	Ventura County Environmental Health
Violation Program:	HMRRP
Violation Source:	CERS

DRAFT

PENTAIR WATER POOL AND SPA (Continued) **S113015608**

Site ID: 399251
Site Name: PENTAIR WATER POOL AND SPA
Violation Date: 12-12-2013
Citation: 22 CCR 45 67450.3(c)(8) - California Code of Regulations, Title 22, Chapter 45, Section(s) 67450.3(c)(8)
Violation Description: Failure to maintain, reproduce, and provide the following documents at the facility where the FTU is operating: 1) The waste analysis plan for the treatment operation; 2) The written inspection schedule; 3) All training documents; 4) The contingency plan; 5) A copy of the most recent treatment notification and a copy of the most recent acknowledgement received from the Department, CUPA or authorized agency; 6) A copy of any local Air District permit and other permits required for the operation of the FTU; 7) A copy of the closure plan; 8) A copy of documents related to the environmental investigation and any cleanup, abatement or other necessary remedial action taken; and 9) Documentation of any convictions, judgments, settlements, or orders resulting from any action by any local, State, or federal environmental or public health enforcement agency concerning the operation of the facility within the last three years, as the documents would be available under the California Public Records Act.
Violation Notes: Returned to compliance on 12/12/2013.
Violation Division: Ventura County Environmental Health
Violation Program: PBR
Violation Source: CERS

Site ID: 399251
Site Name: PENTAIR WATER POOL AND SPA
Violation Date: 05-08-2019
Citation: 22 CCR 15 66265.193 - California Code of Regulations, Title 22, Chapter 15, Section(s) 66265.193
Violation Description: Failure to meet required secondary containment requirements for hazardous waste tank systems or components.
Violation Notes: Returned to compliance on 06/19/2019.
Violation Division: Ventura County Environmental Health
Violation Program: HW
Violation Source: CERS

Site ID: 399251
Site Name: PENTAIR WATER POOL AND SPA
Violation Date: 05-08-2019
Citation: 22 CCR 15 66265.16 - California Code of Regulations, Title 22, Chapter 15, Section(s) 66265.16
Violation Description: Failure to provide employees with hazardous waste training program of class room instructions or on-the-job training within the first six months after the date of their employment or assignment to a facility, or to a new position at a facility and annually thereafter. Training records on current personnel shall be kept until closure of the facility and for former employees the record shall be kept for at least three years from the date the employee last worked at the facility. The records shall include the following: the job title for each position at the facility related to hazardous waste management, and the name of the employee filling each job; a written job description for each position, duties of facility personnel assigned to each position, and a written description of the type and amount of both introductory and continuing training that will be given to each person filling a position.
Violation Notes: Returned to compliance on 06/18/2019.

DRAFT

PENTAIR WATER POOL AND SPA (Continued) **S113015608**

Violation Division: Ventura County Environmental Health
Violation Program: HW
Violation Source: CERS

Site ID: 399251
Site Name: PENTAIR WATER POOL AND SPA
Violation Date: 05-11-2015
Citation: 22 CCR 12 66262.34(a) - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.34(a)
Violation Description: Failure to obtain a permit or grant of interim status to accumulate hazardous waste longer than 90 days.
Violation Notes: Returned to compliance on 06/01/2015.
Violation Division: Ventura County Environmental Health
Violation Program: HW
Violation Source: CERS

Site ID: 399251
Site Name: PENTAIR WATER POOL AND SPA
Violation Date: 05-11-2015
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Description: Failure to establish and electronically submit an adequate training program in safety procedures in the event of a release or threatened release of a hazardous material.
Violation Notes: Returned to compliance on 06/01/2015.
Violation Division: Ventura County Environmental Health
Violation Program: HMRRP
Violation Source: CERS

Site ID: 399251
Site Name: PENTAIR WATER POOL AND SPA
Violation Date: 12-12-2013
Citation: 22 CCR 45 67450.3(c)(7) - California Code of Regulations, Title 22, Chapter 45, Section(s) 67450.3(c)(7)
Violation Description: Failure to permanently mark the exterior of each Fixed TU with the name of the person which owns or operates the FTU, facility identification number and an individual serial number.
Violation Notes: Returned to compliance on 12/12/2013.
Violation Division: Ventura County Environmental Health
Violation Program: PBR
Violation Source: CERS

Site ID: 399251
Site Name: PENTAIR WATER POOL AND SPA
Violation Date: 05-11-2015
Citation: 22 CCR 12 66262.34(f) - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.34(f)
Violation Description: Failure to properly label hazardous waste accumulation containers with the following requirements: "Hazardous Waste", name and address of the generator, physical and chemical characteristics of the Hazardous Waste, and starting accumulation date.
Violation Notes: Returned to compliance on 06/01/2015.
Violation Division: Ventura County Environmental Health
Violation Program: HW
Violation Source: CERS

Site ID: 399251

DRAFT

PENTAIR WATER POOL AND SPA (Continued) **S113015608**

Site Name: PENTAIR WATER POOL AND SPA
Violation Date: 05-11-2015
Citation: 40 CFR 1 265.35 - U.S. Code of Federal Regulations, Title 40, Chapter 1, Section(s) 265.35
Violation Description: Failure to maintain aisle space to allow the unobstructed movement of personnel, fire protection, spill control equipment, and decontamination equipment to any area of facility operation in an emergency, unless it can be demonstrated to the Department that aisle space is not needed for any of these purposes.
Violation Notes: Returned to compliance on 06/01/2015.
Violation Division: Ventura County Environmental Health
Violation Program: HW
Violation Source: CERS

Evaluation:
Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-11-2015
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Ventura County Environmental Health
Eval Program: PBR
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-19-2015
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: FOLLOW-UP QA/QC
Eval Division: Ventura County Environmental Health
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-23-2017
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Ventura County Environmental Health
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-08-2019
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Ventura County Environmental Health
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Case Development Inspection
Eval Date: 10-05-2015
Violations Found: No
Eval Type: Industrial Storm Water Enforcement Follow-up
Eval Notes: the purpose of the inspection was to notify Pentair Water Pool and Spa that the mandatory recertification to enroll the facility under the

DRAFT

PENTAIR WATER POOL AND SPA (Continued) **S113015608**

new Statewide Industrial General Stormwater Permit was not completed by the August 15, 2015 due date.
Eval Division: Water Boards
Eval Program: INDSTW
Eval Source: SMARTS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-08-2019
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Ventura County Environmental Health
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-11-2015
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Ventura County Environmental Health
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-19-2015
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: FOLLOW-UP QA/QC
Eval Division: Ventura County Environmental Health
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-23-2017
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Ventura County Environmental Health
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-23-2017
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Ventura County Environmental Health
Eval Program: APSA
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-23-2017
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Ventura County Environmental Health

DRAFT

PENTAIR WATER POOL AND SPA (Continued) **S113015608**

Eval Program: PBR
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 12-12-2013
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Ventura County Environmental Health
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-08-2019
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Ventura County Environmental Health
Eval Program: APSA
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-08-2019
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Ventura County Environmental Health
Eval Program: PBR
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-11-2015
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Ventura County Environmental Health
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 12-12-2013
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Ventura County Environmental Health
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 12-12-2013
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Ventura County Environmental Health
Eval Program: PBR
Eval Source: CERS

DRAFT

PENTAIR WATER POOL AND SPA (Continued) **S113015608**

Coordinates:

Site ID:	399251
Facility Name:	PENTAIR WATER POOL AND SPA
Env Int Type Code:	HMBP
Program ID:	10332370
Coord Name:	Not reported
Ref Point Type Desc:	Center of a facility or station.
Latitude:	34.279680
Longitude:	-118.914400

Affiliation:

Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported
Affiliation Address:	10951 W LOS ANGELES AVE
Affiliation City:	MOORPARK
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	93021
Affiliation Phone:	Not reported

Affiliation Type Desc:	Identification Signer
Entity Name:	Andy Freeman
Entity Title:	Maintenance Manager
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Affiliation Type Desc:	Operator
Entity Name:	Andy Freeman
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(805) 553-5041

Affiliation Type Desc:	Document Preparer
Entity Name:	BADAOUI MOUDERRES
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Affiliation Type Desc:	Parent Corporation
Entity Name:	PENTAIR POOL PRODUCTS
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported

DRAFT

PENTAIR WATER POOL AND SPA (Continued) **S113015608**

Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	CUPA District
Entity Name:	Ventura County Environmental Health
Entity Title:	Not reported
Affiliation Address:	800 South Victoria Avenue
Affiliation City:	Ventura
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	93009
Affiliation Phone:	(805) 654-2813
Affiliation Type Desc:	Onsite Treatment Unit Owner Operator
Entity Name:	Andy Freeman
Entity Title:	Facilities Manager
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Environmental Contact
Entity Name:	Badaoui Mouderres
Entity Title:	Not reported
Affiliation Address:	2144 E. Ojai Avenue
Affiliation City:	Ojai
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	93023
Affiliation Phone:	Not reported
Affiliation Type Desc:	Legal Owner
Entity Name:	PENTAIR WATER POOL AND SPA
Entity Title:	Not reported
Affiliation Address:	10951 W LOS ANGELES AVE
Affiliation City:	MOORPARK
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	93021
Affiliation Phone:	(805) 553-5500
Affiliation Type Desc:	Onsite Treatment Unit Owner Operator
Entity Name:	Antonio Valencia
Entity Title:	Facilities Supervisor
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Owner/Operator
Entity Name:	Pentair Water Pool and Spa

DRAFT

PENTAIR WATER POOL AND SPA (Continued) **S113015608**

Entity Title:	Operator
Affiliation Address:	10951 W Los Angeles Ave
Affiliation City:	Moorpark
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	93021
Affiliation Phone:	Not reported

A2 **QUIJADA TRUCKING** **RCRA NonGen / NLR** **1024758508**
West **10951 LOS ANGELES AVE** **CAC002978352**
< 1/8 **MOORPARK, CA 93021**
0.081 mi.
426 ft. **Site 2 of 4 in cluster A**

Relative: **Lower**

Actual: **448 ft.**

RCRA NonGen / NLR:

Date Form Received by Agency:	20180830
Handler Name:	QUIJADA TRUCKING
Handler Address:	10951 LOS ANGELES AVE
Handler City,State,Zip:	MOORPARK, CA 93021
EPA ID:	CAC002978352
Contact Name:	QUIJADA TRUCKING
Contact Address:	10951 LOS ANGELES AVE
Contact City,State,Zip:	MOORPARK, CA 93021
Contact Telephone:	909-900-0209
Contact Fax:	Not reported
Contact Email:	ROCKY@PATRIOTENVIRONMENTAL.COM
Contact Title:	Not reported
EPA Region:	09
Land Type:	Not reported
Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Handler Activities
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	15136 MERRILL AVE
Mailing City,State,Zip:	FONTANA, CA 92335
Owner Name:	QUIJADA TRUCKING
Owner Type:	Other
Operator Name:	QUIJADA TRUCKING
Operator Type:	Other
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	Yes
Universal Waste Destination Facility:	Yes
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported

DRAFT

QUIJADA TRUCKING (Continued) **1024758508**

Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20180905
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Operator
Owner/Operator Name:	QUIJADA TRUCKING
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	10951 LOS ANGELES AVE
Owner/Operator City,State,Zip:	MOORPARK, CA 93021
Owner/Operator Telephone:	909-900-0209
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name:	QUIJADA TRUCKING

DRAFT

QUIJADA TRUCKING (Continued) **1024758508**

Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	10951 LOS ANGELES AVE
Owner/Operator City,State,Zip:	MOORPARK, CA 93021
Owner/Operator Telephone:	909-900-0209
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	20180830
Handler Name: QUIJADA TRUCKING	
Federal Waste Generator Description:	Not a generator, verified
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	Yes
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

List of NAICS Codes and Descriptions:

NAICS Code:	56299
NAICS Description:	ALL OTHER WASTE MANAGEMENT SERVICES

Facility Has Received Notices of Violations:

Violations:	No Violations Found

Evaluation Action Summary:

Evaluations:	No Evaluations Found

A3
West
< 1/8
0.081 mi.
426 ft.

PENTAIR WATER POOL AND SPA INC **RCRA-LQG** **1024798420**
10951 W. LOS ANGELES AVENUE **CAL000201053**
MOORPARK, CA 93021

Site 3 of 4 in cluster A

Relative:
Lower

Actual:
448 ft.

RCRA-LQG:

Date Form Received by Agency:	20200310
Handler Name:	PENTAIR WATER POOL AND SPA INC
Handler Address:	10951 W. LOS ANGELES AVENUE
Handler City,State,Zip:	MOORPARK, CA 93021-0000
EPA ID:	CAL000201053
Contact Name:	BADAOUI MOUDERRES
Contact Address:	W. LOS ANGELES AVENUE
Contact City,State,Zip:	MOORPARK, CA 93021
Contact Telephone:	805-208-7576
Contact Fax:	Not reported
Contact Email:	BADAOUI.MOUDERRES@PENTAIR.COM
Contact Title:	MR.
EPA Region:	09
Land Type:	Private

DRAFT

PENTAIR WATER POOL AND SPA INC (Continued) **1024798420**

Federal Waste Generator Description:	Large Quantity Generator
Non-Notifier:	Not reported
Biennial Report Cycle:	2019
Accessibility:	Not reported
Active Site Indicator:	Handler Activities
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	W. LOS ANGELES AVENUE
Mailing City,State,Zip:	MOORPARK, CA 93021
Owner Name:	PENTAIR WATER POOL & SPA
Owner Type:	Private
Operator Name:	PENTAIR WATER POOL & SPA
Operator Type:	Private
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No

DRAFT

PENTAIR WATER POOL AND SPA INC (Continued) **1024798420**

Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20201008
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Biennial: List of Years
Year: 2019

Click Here for Biennial Reporting System Data:
Year: 2017

Click Here for Biennial Reporting System Data:

Hazardous Waste Summary:
Waste Code: D001
Waste Description: IGNITABLE WASTE

Waste Code: U002
Waste Description: 2-PROPANONE (I) (OR) ACETONE (I)

Waste Code: U031
Waste Description: 1-BUTANOL (I) (OR) N-BUTYL ALCOHOL (I)

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name:	PENTAIR WATER POOL & SPA
Legal Status:	Private
Date Became Current:	20020101
Date Ended Current:	Not reported
Owner/Operator Address:	10951 W. LOS ANGELES AVENUE
Owner/Operator City,State,Zip:	MOORPARK, CA 93021
Owner/Operator Telephone:	805-208-7576
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	BADAOUI.MOUDERRES@PENTAIR.COM

Owner/Operator Indicator:	Operator
Owner/Operator Name:	PENTAIR WATER POOL & SPA
Legal Status:	Private
Date Became Current:	20020101
Date Ended Current:	Not reported
Owner/Operator Address:	10951 W. LOS ANGELES AVENUE
Owner/Operator City,State,Zip:	MOORPARK, CA 93021
Owner/Operator Telephone:	805-208-7576
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	BADAOUI.MOUDERRES@PENTAIR.COM

Owner/Operator Indicator: Operator

DRAFT

PENTAIR WATER POOL AND SPA INC (Continued) **1024798420**

Owner/Operator Name:	PENTAIR WATER POOL & SPA
Legal Status:	Private
Date Became Current:	20020101
Date Ended Current:	Not reported
Owner/Operator Address:	10951 W. LOS ANGELES AVENUE
Owner/Operator City,State,Zip:	MOORPARK, CA 93021
Owner/Operator Telephone:	805-208-7576
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	BADAOUI.MOUDERRES@PENTAIR.COM

Owner/Operator Indicator:	Owner
Owner/Operator Name:	PENTAIR WATER POOL & SPA
Legal Status:	Private
Date Became Current:	20020101
Date Ended Current:	Not reported
Owner/Operator Address:	10951 W. LOS ANGELES AVENUE
Owner/Operator City,State,Zip:	MOORPARK, CA 93021
Owner/Operator Telephone:	805-208-7576
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	BADAOUI.MOUDERRES@PENTAIR.COM

Historic Generators:

Receive Date:	20180821
Handler Name:	PENTAIR WATER POOL AND SPA INC
Federal Waste Generator Description:	Large Quantity Generator
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	No
Non Storage Recycler Activity:	No
Electronic Manifest Broker:	No

Receive Date:	20200310
Handler Name:	PENTAIR WATER POOL AND SPA INC
Federal Waste Generator Description:	Large Quantity Generator
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	Yes
Non Storage Recycler Activity:	No
Electronic Manifest Broker:	No

List of NAICS Codes and Descriptions:

NAICS Code:	326199
NAICS Description:	ALL OTHER PLASTICS PRODUCT MANUFACTURING

Facility Has Received Notices of Violations:

Violations:	No Violations Found

DRAFT

PENTAIR WATER POOL AND SPA INC (Continued) **1024798420**

Evaluation Action Summary:
Evaluations: No Evaluations Found

A4 **KDI AMERICAN PRODUCTS** **RCRA-SQG** **1000101871**
West **10951 W LOS ANGELES AVE** **CAD982371247**
< 1/8 **MOORPARK, CA 93020**
0.081 mi.
426 ft. **Site 4 of 4 in cluster A**

Relative: RCRA-SQG:
Lower

Actual:
448 ft.

Date Form Received by Agency:	19960901
Handler Name:	KDI AMERICAN PRODUCTS
Handler Address:	10951 W LOS ANGELES AVE
Handler City,State,Zip:	MOORPARK, CA 93020
EPA ID:	CAD982371247
Contact Name:	Not reported
Contact Address:	Not reported
Contact City,State,Zip:	Not reported
Contact Telephone:	Not reported
Contact Fax:	Not reported
Contact Email:	Not reported
Contact Title:	Not reported
EPA Region:	09
Land Type:	Not reported
Federal Waste Generator Description:	Small Quantity Generator
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Handler Activities
State District Owner:	CA
State District:	3
Mailing Address:	10951 W LOS ANGELES AVE
Mailing City,State,Zip:	MOORPARK, CA 93020
Owner Name:	Not reported
Owner Type:	Not reported
Operator Name:	NOT REQUIRED
Operator Type:	Private
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	NN

DRAFT

KDI AMERICAN PRODUCTS (Continued) **1000101871**

Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20020917
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	Not reported
Manifest Broker:	Not reported
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Operator
Owner/Operator Name:	NOT REQUIRED
Legal Status:	Private
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	NOT REQUIRED
Owner/Operator City,State,Zip:	NOT REQUIRED, ME 99999
Owner/Operator Telephone:	415-555-1212
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name:	KDI CORP
Legal Status:	Private
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	NOT REQUIRED

DRAFT

KDI AMERICAN PRODUCTS (Continued) **1000101871**

Owner/Operator City,State,Zip: NOT REQUIRED, ME 99999
Owner/Operator Telephone: 415-555-1212
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:
Receive Date: 19960901
Handler Name: KDI AMERICAN PRODUCTS
Federal Waste Generator Description: Small Quantity Generator
State District Owner: CA
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 19880420
Handler Name: KDI AMERICAN PRODUCTS
Federal Waste Generator Description: Large Quantity Generator
State District Owner: CA
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 19910403
Handler Name: AMERICAN PRODUCTS
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:
NAICS Code: 326199
NAICS Description: ALL OTHER PLASTICS PRODUCT MANUFACTURING

NAICS Code: 335129
NAICS Description: OTHER LIGHTING EQUIPMENT MANUFACTURING

Facility Has Received Notices of Violation:
Found Violation: Yes
Agency Which Determined Violation: State

DRAFT

KDI AMERICAN PRODUCTS (Continued) **1000101871**

Violation Short Description:	Generators - General
Date Violation was Determined:	19931122
Actual Return to Compliance Date:	19981122
Return to Compliance Qualifier:	Not Resolved
Violation Responsible Agency:	State
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	Generators - General
Date Violation was Determined:	19921014
Actual Return to Compliance Date:	19931122
Return to Compliance Qualifier:	Unverifiable
Violation Responsible Agency:	State
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported

DRAFT

KDI AMERICAN PRODUCTS (Continued) **1000101871**

Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Evaluation Action Summary:

Evaluation Date:	19931122
Evaluation Responsible Agency:	State Contractor/Grantee
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19981122
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19921014
Evaluation Responsible Agency:	State Contractor/Grantee
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19931122
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

B5 **J. D. MCGRATH FARMS** **HIST UST** **U001579580**
ESE **11015 W LOS ANGELES AVE** **N/A**
1/8-1/4 **MOORPARK, CA 93021**
0.131 mi.
692 ft. **Site 1 of 4 in cluster B**

Relative: **Higher**

Actual: **453 ft.**

HIST UST:

Name:	J. D. MCGRATH FARMS
Address:	11015 W LOS ANGELES AVE
City,State,Zip:	MOORPARK, CA 93021
File Number:	Not reported
URL:	Not reported

DRAFT

J. D. MCGRATH FARMS (Continued) **U001579580**

Region:	STATE
Facility ID:	00000009354
Facility Type:	Other
Other Type:	FARM
Contact Name:	JAMES J. MCGRATH
Telephone:	8055290089
Owner Name:	J. D. MCGRATH FARMS
Owner Address:	P.O. BOX 1106
Owner City,St,Zip:	OXNARD, CA 93030
Total Tanks:	0001
Tank Num:	001
Container Num:	1
Year Installed:	1939
Tank Capacity:	00000550
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED
Container Construction Thickness:	Not reported
Leak Detection:	None

B6 **M & C** **HIST UST** **S113126327**
ESE **11015 LOS ANGELES AVE** **HAZNET** **N/A**
1/8-1/4 **MOORPARK, CA 93030** **HWTS**
0.131 mi.
692 ft. **Site 2 of 4 in cluster B**

Relative:
Higher

Actual:
453 ft.

HIST UST:

Name:	J D MCGRATH FARMS
Address:	11015 LOS ANGELES AVE
City,State,Zip:	MOORPARK, CA 93021
File Number:	0002C8E3
URL:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002C8E3.pdf
Region:	Not reported
Facility ID:	Not reported
Facility Type:	Not reported
Other Type:	Not reported
Contact Name:	Not reported
Telephone:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner City,St,Zip:	Not reported
Total Tanks:	Not reported
Tank Num:	Not reported
Container Num:	Not reported
Year Installed:	Not reported
Tank Capacity:	Not reported
Tank Used for:	Not reported
Type of Fuel:	Not reported
Container Construction Thickness:	Not reported
Leak Detection:	Not reported

Click here for Geo Tracker PDF:

HAZNET:

Name:	M & C
Address:	11015 LOS ANGELES AVE

DRAFT

M & C (Continued) **S113126327**

Address 2: Not reported
City,State,Zip: MOORPARK, CA 93030
Contact: MEL JACINTO
Telephone: 8057940081
Mailing Name: Not reported
Mailing Address: PO BOX 65

Year: 2003
Gepaid: CAL000270029
TSD EPA ID: CAT080033681
CA Waste Code: 223 - Unspecified oil-containing waste
Disposal Method: R01 - Recycler
Tons: 0.9

Additional Info:
Year: 2003
Gen EPA ID: CAL000270029

Shipment Date: 20030715
Creation Date: 7/28/2004 10:45:53
Receipt Date: 20030724
Manifest ID: 22549582
Trans EPA ID: CAD983609678
Trans Name: Not reported
Trans 2 EPA ID: Not reported
Trans 2 Name: Not reported
TSDF EPA ID: CAT080033681
Trans Name: Not reported
TSDF Alt EPA ID: CAT080033681
TSDF Alt Name: Not reported
Waste Code Description: 223 - Unspecified oil-containing waste
RCRA Code: Not reported
Meth Code: R01 - Recycler
Quantity Tons: 0.9
Waste Quantity: 1800
Quantity Unit: P
Additional Code 1: Not reported
Additional Code 2: Not reported
Additional Code 3: Not reported
Additional Code 4: Not reported
Additional Code 5: Not reported

HWTS:
Name: M & C
Address: 11015 LOS ANGELES AVE
Address 2: Not reported
City,State,Zip: MOORPARK, CA 93030
EPA ID: CAL000270029
Inactive Date: 06/30/2003
Create Date: 05/06/2003
Last Act Date: 03/28/2005
Mailing Name: Not reported
Mailing Address: PO BOX 65
Mailing Address 2: Not reported
Mailing City,State,Zip: SAN PABLO, CA 93060

DRAFT

M & C (Continued) **S113126327**

Owner Name:	MEL JACINTO
Owner Address:	PO BOX 65
Owner Address 2:	Not reported
Owner City,State,Zip:	SAN PABLO, CA 93060
Contact Name:	MEL JACINTO
Contact Address:	PO BOX 65
Contact Address 2:	Not reported
City,State,Zip:	SAN PABLO, CA 93060

NAICS:

EPA ID:	CAL000270029
Create Date:	2003-05-06 11:46:07.750
NAICS Code:	11132
NAICS Description:	Citrus (except Orange) Groves
Issued EPA ID Date:	2003-05-06 11:46:07.70000
Inactive Date:	2003-06-30 00:00:00
Facility Name:	M & C
Facility Address:	11015 LOS ANGELES AVE
Facility Address 2:	Not reported
Facility City:	MOORPARK
Facility County:	Not reported
Facility State:	CA
Facility Zip:	93030

B7 **AST** **A100344400**
ESE **11018 LOS ANGELES AVE** **N/A**
1/8-1/4 **MOORPARK, CA**
0.135 mi.
712 ft. **Site 3 of 4 in cluster B**

Relative: **Higher**

Actual: **453 ft.**

AST:

Name:	Not reported
Address:	11018 LOS ANGELES AVE
City/Zip:	MOORPARK,
Certified Unified Program Agencies:	Ventura
Owner:	MURANAKA FARM
Total Gallons:	1850
CERSID:	Not reported
Facility ID:	Not reported
Business Name:	Not reported
Phone:	Not reported
Fax:	Not reported
Mailing Address:	Not reported
Mailing Address City:	Not reported
Mailing Address State:	Not reported
Mailing Address Zip Code:	Not reported
Operator Name:	Not reported
Operator Phone:	Not reported
Owner Phone:	Not reported
Owner Mail Address:	Not reported
Owner State:	Not reported
Owner Zip Code:	Not reported
Owner Country:	Not reported
Property Owner Name:	Not reported
Property Owner Phone:	Not reported
Property Owner Mailing Address:	Not reported
Property Owner City:	Not reported

DRAFT

(Continued) **A100344400**

Property Owner Stat : Not reported
Property Owner Zip Code: Not reported
Property Owner Country: Not reported
EPAID: Not reported

B8
ESE
1/8-1/4
0.135 mi.
712 ft.

Relative:
Higher

Actual:
453 ft.

MURANAKA FARM ARROYO RESTORATION
11018 E LOS ANGELES AVE
MOORPARK, CA 93021

Site 4 of 4 in cluster B

AST
CERS HAZ WASTE
CERS TANKS
VENTURA CO. BWT
NPDES
WDR
CIWQS
CERS

S105511802
N/A

AST:
Name: MURANAKA FARM
Address: 11018 LOS ANGELES AVE
City/Zip: MOORPARK,93021
Certified Unified Program Agencies: Not reported
Owner: MURANAKA FARM
Total Gallons: Not reported
CERSID: 10333489
Facility ID: Not reported
Business Name: MURANAKA FARM
Phone: (805) 529-6692
Fax: Not reported
Mailing Address: 11018 LOS ANGELES AVE.
Mailing Address City: MOORPARK
Mailing Address State: CA
Mailing Address Zip Code: 93021
Operator Name: MATT GILLIO
Operator Phone: (805) 529-0209
Owner Phone: (805) 529-6692
Owner Mail Address: 11018 LOS ANGELES AVE.
Owner State: CA
Owner Zip Code: 93021
Owner Country: United States
Property Owner Name: Not reported
Property Owner Phone: Not reported
Property Owner Mailing Address: Not reported
Property Owner City: Not reported
Property Owner Stat : Not reported
Property Owner Zip Code: Not reported
Property Owner Country: Not reported
EPAID: CAD983599002

CERS HAZ WASTE:
Name: MURANAKA FARM
Address: 11018 LOS ANGELES AVE
City,State,Zip: MOORPARK, CA 93021
Site ID: 397967
CERS ID: 10333489
CERS Description: Hazardous Waste Generator

CERS TANKS:
Name: MURANAKA FARM
Address: 11018 LOS ANGELES AVE

DRAFT

MURANAKA FARM ARROYO RESTORATION (Continued) **S105511802**

City,State,Zip: MOORPARK, CA 93021
Site ID: 397967
CERS ID: 10333489
CERS Description: Aboveground Petroleum Storage

VENTURA CO. BWT:
Name: MURANAKA FARM
Address: 11018 LOS ANGELES AVE
City,State,Zip: MOORPARK, CA
Facility ID: FA0005734
Program: BUSINESS PLAN - FARM/HAZARDOUS WASTE GENERATOR

Name: MURANAKA FARM
Address: 11018 LOS ANGELES AVE
City,State,Zip: MOORPARK, CA
Facility ID: HM 3049
Program: Not reported

NPDES:
Name: MURANAKA FARM ARROYO RESTORATION
Address: 11018 E LOS ANGELES AVE
City,State,Zip: MOORPARK, CA 93021
Facility Status: Not reported
NPDES Number: Not reported
Region: Not reported
Agency Number: Not reported
Regulatory Measure ID: Not reported
Place ID: Not reported
Order Number: Not reported
WDID: 4 56C357242
Regulatory Measure Type: Construction
Program Type: Not reported
Adoption Date Of Regulatory Measure: Not reported
Effective Date Of Regulatory Measure: Not reported
Termination Date Of Regulatory Measure: Not reported
Expiration Date Of Regulatory Measure: Not reported
Discharge Address: Not reported
Discharge Name: Not reported
Discharge City: Not reported
Discharge State: Not reported
Discharge Zip: Not reported
Status: Terminated
Status Date: 07/06/2016
Operator Name: Muranka Farm
Operator Address: PO Box 189
Operator City: Moorpark
Operator State: California
Operator Zip: 93021

NPDES as of 03/2018:
NPDES Number: CAS000002
Status: Terminated
Agency Number: 0
Region: 4
Regulatory Measure ID: 401519
Order Number: 2009-0009-DWQ
Regulatory Measure Type: Enrollee

DRAFT

MURANAKA FARM ARROYO RESTORATION (Continued) **S105511802**

Place ID:	Not reported
WDID:	4 56C357242
Program Type:	Construction
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	01/27/2010
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	06/14/2016
Discharge Name:	Muranka Farm
Discharge Address:	PO Box 189
Discharge City:	Moorpark
Discharge State:	California
Discharge Zip:	93021
Received Date:	Not reported
Processed Date:	Not reported
Status:	Not reported
Status Date:	Not reported
Place Size:	Not reported
Place Size Unit:	Not reported
Contact:	Not reported
Contact Title:	Not reported
Contact Phone:	Not reported
Contact Phone Ext:	Not reported
Contact Email:	Not reported
Operator Name:	Not reported
Operator Address:	Not reported
Operator City:	Not reported
Operator State:	Not reported
Operator Zip:	Not reported
Operator Contact:	Not reported
Operator Contact Title:	Not reported
Operator Contact Phone:	Not reported
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	Not reported
Operator Type:	Not reported
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	Not reported
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported

DRAFT

MURANAKA FARM ARROYO RESTORATION (Continued) **S105511802**

Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	Not reported
Receiving Water Name:	Not reported
Certifier:	Not reported
Certifier Title:	Not reported
Certification Date:	Not reported
Primary Sic:	Not reported
Secondary Sic:	Not reported
Tertiary Sic:	Not reported
NPDES Number:	Not reported
Status:	Not reported
Agency Number:	Not reported
Region:	4
Regulatory Measure ID:	401519
Order Number:	Not reported
Regulatory Measure Type:	Construction
Place ID:	Not reported
WDID:	4 56C357242
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	06/14/2016
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Received Date:	01/20/2010
Processed Date:	01/27/2010
Status:	Terminated
Status Date:	07/06/2016
Place Size:	17
Place Size Unit:	Acres
Contact:	Bill OBrien
Contact Title:	Not reported
Contact Phone:	805-732-9053
Contact Phone Ext:	Not reported
Contact Email:	billo@ngeneng.com
Operator Name:	Muranka Farm
Operator Address:	PO Box 189
Operator City:	Moorpark
Operator State:	California
Operator Zip:	93021
Operator Contact:	Bill OBrien
Operator Contact Title:	Not reported
Operator Contact Phone:	805-798-7664
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	billo@ngeneng.com
Operator Type:	Private Business
Developer:	Muranka Farm
Developer Address:	PO Box 189
Developer City:	Moorpark
Developer State:	California

DRAFT

MURANAKA FARM ARROYO RESTORATION (Continued) **S105511802**

Developer Zip:	93021
Developer Contact:	Bill OBrien
Developer Contact Title:	Engineer
Constype Linear Utility Ind:	N
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	N
Constype Below Ground Ind:	N
Constype Cable Line Ind:	N
Constype Comm Line Ind:	N
Constype Commertial Ind:	N
Constype Electrical Line Ind:	N
Constype Gas Line Ind:	N
Constype Industrial Ind:	N
Constype Other Description:	Agriculture River Channel Overbank Area
Constype Other Ind:	N
Constype Recons Ind:	N
Constype Residential Ind:	N
Constype Transport Ind:	N
Constype Utility Description:	Not reported
Constype Utility Ind:	N
Constype Water Sewer Ind:	N
Dir Discharge Uswater Ind:	Y
Receiving Water Name:	Arroyo Las Posas tributary to Calleguas Creek
Certifier:	Tom Larson
Certifier Title:	CFO
Certification Date:	01-JUL-10
Primary Sic:	Not reported
Secondary Sic:	Not reported
Tertiary Sic:	Not reported

WDR:

Name:	MURANAKA FARM INC.
Address:	11018 EAST LOS ANGELES AVENUE
City,State,Zip:	MOORPARK, CA
Global ID:	WDR100000541
Status:	DRAFT - WDR

CIWQS:

Name:	MURANAKA FARM ARROYO RESTORATION
Address:	11018 E LOS ANGELES AVE
City,State,Zip:	MOORPARK, CA 93021
Agency:	Muranka Farm
Agency Address:	PO Box 189, Moorpark, CA 93021
Place/Project Type:	Construction
SIC/NAICS:	Not reported
Region:	4
Program:	CONSTW
Regulatory Measure Status:	Terminated
Regulatory Measure Type:	Storm water construction
Order Number:	2009-0009-DWQ
WDID:	4 56C357242
NPDES Number:	CAS000002
Adoption Date:	Not reported
Effective Date:	01/27/2010

DRAFT

MURANAKA FARM ARROYO RESTORATION (Continued) **S105511802**

Termination Date:	06/14/2016
Expiration/Review Date:	Not reported
Design Flow:	Not reported
Major/Minor:	Not reported
Complexity:	Not reported
TTWQ:	Not reported
Enforcement Actions within 5 years:	0
Violations within 5 years:	0
Latitude:	Not reported
Longitude:	Not reported

CERS:

Name:	MURANAKA FARM
Address:	11018 LOS ANGELES AVE
City,State,Zip:	MOORPARK, CA 93021
Site ID:	397967
CERS ID:	10333489
CERS Description:	Chemical Storage Facilities

Violations:

Site ID:	397967
Site Name:	MURANAKA FARM
Violation Date:	04-05-2017
Citation:	HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Description:	Failure to complete and electronically submit a site map with all required content.
Violation Notes:	Returned to compliance on 05/04/2017.
Violation Division:	Ventura County Environmental Health
Violation Program:	HMRRP
Violation Source:	CERS

Site ID:	397967
Site Name:	MURANAKA FARM
Violation Date:	04-05-2017
Citation:	HSC 6.95 25508.1(a)-(f) - California Health and Safety Code, Chapter 6.95, Section(s) 25508.1(a)-(f)
Violation Description:	Failure to electronically update business plan within 30 days of any one of the following events: A 100 percent or more increase in the quantity of a previously disclosed material. Any handling of a previously undisclosed hazardous materials at or above reportable quantities. A change of business address, business ownership, or business name. A substantial change in the handler's operations that requires modification to any portion of the business plan.
Violation Notes:	Returned to compliance on 04/05/2017.
Violation Division:	Ventura County Environmental Health
Violation Program:	HMRRP
Violation Source:	CERS

Site ID:	397967
Site Name:	MURANAKA FARM
Violation Date:	04-05-2017
Citation:	HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Description:	Failure to annually review and electronically certify that the business plan is complete and accurate on or before the annual due date.

DRAFT

MURANAKA FARM ARROYO RESTORATION (Continued) **S105511802**

Violation Notes:	Returned to compliance on 04/05/2017.
Violation Division:	Ventura County Environmental Health
Violation Program:	HMRRP
Violation Source:	CERS
Site ID:	397967
Site Name:	MURANAKA FARM
Violation Date:	04-05-2017
Citation:	22 CCR 11 66261.7 - California Code of Regulations, Title 22, Chapter 11, Section(s) 66261.7
Violation Description:	Failure to manage empty containers greater than 5 gallons in capacity that previously held a hazardous material/waste in accordance with 22 CCR 11 66261.7 including but not limited to the following: (e)(2)By reclaiming its scrap value onsite or shipping the container or inner liner to a person who reclaims its scrap value; or (3) By reconditioning or remanufacturing the container or inner liner onsite for subsequent reuse, or shipping the container or inner liner to a person who reconditions or remanufactures the container or inner liner; or (4) By shipping the container or inner liner to a supplier or to another intermediate collection location for accumulation prior to managing the container or inner liner pursuant to subsections (e)(2) or (e)(3) of this section; or (i) By shipping the container or inner liner back to the supplier for the purpose of being refilled. (f) A container or an inner liner removed from a container larger than five gallons in capacity which is managed pursuant to subsection (e) of this section shall be marked with the date it has been emptied and shall be managed within one year of being emptied.
Violation Notes:	Returned to compliance on 05/01/2017.
Violation Division:	Ventura County Environmental Health
Violation Program:	HW
Violation Source:	CERS
Site ID:	397967
Site Name:	MURANAKA FARM
Violation Date:	04-05-2017
Citation:	HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Description:	Failure to electronically submit the training program in safety procedures when not meeting the agricultural handler exemption requirements.
Violation Notes:	Returned to compliance on 05/04/2017.
Violation Division:	Ventura County Environmental Health
Violation Program:	HMRRP
Violation Source:	CERS
Site ID:	397967
Site Name:	MURANAKA FARM
Violation Date:	04-05-2017
Citation:	40 CFR 1 265.35 - U.S. Code of Federal Regulations, Title 40, Chapter 1, Section(s) 265.35
Violation Description:	Failure to maintain aisle space to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of facility operation in an emergency, unless aisle space is not needed for any of these purposes.
Violation Notes:	Returned to compliance on 05/01/2017.
Violation Division:	Ventura County Environmental Health
Violation Program:	HW

DRAFT

MURANAKA FARM ARROYO RESTORATION (Continued) **S105511802**

Violation Source: CERS

Site ID: 397967
Site Name: MURANAKA FARM
Violation Date: 04-05-2017
Citation: HSC 6.5 25160.2 - California Health and Safety Code, Chapter 6.5, Section(s) 25160.2
Violation Description: Failure of a generator of hazardous waste that meets the conditions to be transported on a consolidated manifest to comply with one or more of the required consolidated manifesting procedures.
Violation Notes: Returned to compliance on 04/05/2017.
Violation Division: Ventura County Environmental Health
Violation Program: HW
Violation Source: CERS

Site ID: 397967
Site Name: MURANAKA FARM
Violation Date: 04-05-2017
Citation: 22 CCR 12 66262.34(f) - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.34(f)
Violation Description: Failure to properly label hazardous waste accumulation containers and portable tanks with the following requirements: "Hazardous Waste", name and address of the generator, physical and chemical characteristics of the Hazardous Waste, and starting accumulation date.
Violation Notes: Returned to compliance on 05/04/2017.
Violation Division: Ventura County Environmental Health
Violation Program: HW
Violation Source: CERS

Evaluation:
Eval General Type: Compliance Evaluation Inspection
Eval Date: 02-27-2015
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Ventura County Environmental Health
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-05-2017
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Ventura County Environmental Health
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-05-2017
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Ventura County Environmental Health
Eval Program: HW
Eval Source: CERS

DRAFT

MURANAKA FARM ARROYO RESTORATION (Continued) **S105511802**

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	11-08-2013
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	Ventura County Environmental Health
Eval Program:	HMRRP
Eval Source:	CERS

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	02-27-2015
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	Ventura County Environmental Health
Eval Program:	APSA
Eval Source:	CERS

Eval General Type:	Other/Unknown
Eval Date:	05-02-2018
Violations Found:	No
Eval Type:	Other, not routine, done by local agency
Eval Notes:	CONSULTATION
Eval Division:	Ventura County Environmental Health
Eval Program:	HMRRP
Eval Source:	CERS

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	11-08-2013
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	Ventura County Environmental Health
Eval Program:	HW
Eval Source:	CERS

Coordinates:

Site ID:	397967
Facility Name:	MURANAKA FARM
Env Int Type Code:	APSA
Program ID:	10333489
Coord Name:	Not reported
Ref Point Type Desc:	Center of a facility or station.
Latitude:	34.274360
Longitude:	-118.914370

Affiliation:

Affiliation Type Desc:	Environmental Contact
Entity Name:	Tim Minami
Entity Title:	Not reported
Affiliation Address:	PO BOX 189
Affiliation City:	MOORPARK
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	93020
Affiliation Phone:	Not reported

DRAFT

MURANAKA FARM ARROYO RESTORATION (Continued) **S105511802**

Affiliation Type Desc:	Legal Owner
Entity Name:	MURANAKA FARM
Entity Title:	Not reported
Affiliation Address:	11018 LOS ANGELES AVE.
Affiliation City:	MOORPARK
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	93021
Affiliation Phone:	(805) 529-6692

Affiliation Type Desc:	Operator
Entity Name:	Tim Minami
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(805) 529-6692

Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported
Affiliation Address:	11018 LOS ANGELES AVE.
Affiliation City:	MOORPARK
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	93021
Affiliation Phone:	Not reported

Affiliation Type Desc:	Parent Corporation
Entity Name:	MURANAKA FARM
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Affiliation Type Desc:	CUPA District
Entity Name:	Ventura County Environmental Health
Entity Title:	Not reported
Affiliation Address:	800 South Victoria Avenue
Affiliation City:	Ventura
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	93009
Affiliation Phone:	(805) 654-2813

Affiliation Type Desc:	Document Preparer
Entity Name:	Tim Minami
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported

DRAFT

MURANAKA FARM ARROYO RESTORATION (Continued) **S105511802**

Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Identification Signer
Entity Name:	Tim Minami
Entity Title:	COO
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

C9 **MURANAKA FARM INC** **RCRA NonGen / NLR** **1025876171**
ESE **11128 E LOS ANGELES AVE** **CAL000449307**
1/8-1/4 **MOORPARK, CA 93021**
0.194 mi.
1023 ft. **Site 1 of 2 in cluster C**

Relative: **Higher**

Actual: **454 ft.**

RCRA NonGen / NLR:

Date Form Received by Agency:	20190925
Handler Name:	MURANAKA FARM INC
Handler Address:	11128 E LOS ANGELES AVE
Handler City,State,Zip:	MOORPARK, CA 93021
EPA ID:	CAL000449307
Contact Name:	FRANCISCO CARDENAS
Contact Address:	11128 E LOS ANGELES AVE
Contact City,State,Zip:	MOORPARK, CA 93021
Contact Telephone:	805-529-6692
Contact Fax:	805-529-8301
Contact Email:	LETICIA@MURANAKAFARM.COM
Contact Title:	Not reported
EPA Region:	09
Land Type:	Not reported
Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Not reported
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	PO BOX 189
Mailing City,State,Zip:	MOORPARK, CA 93020
Owner Name:	MURANAKA FARM INC
Owner Type:	Other
Operator Name:	FRANCISCO CARDENAS
Operator Type:	Other
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No

DRAFT

MURANAKA FARM INC (Continued) **1025876171**

Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20190927
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Operator
Owner/Operator Name:	FRANCISCO CARDENAS
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	11128 E LOS ANGELES AVE
Owner/Operator City,State,Zip:	MOORPARK, CA 93021
Owner/Operator Telephone:	805-529-6692
Owner/Operator Telephone Ext:	Not reported

DRAFT

MURANAKA FARM INC (Continued) **1025876171**

Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: MURANAKA FARM INC
Legal Status: Other
Date Became Current: Not reported
Date Ended Current: Not reported
Owner/Operator Address: 5160 GABBERT RD
Owner/Operator City,State,Zip: MOORPARK, CA 93021
Owner/Operator Telephone: 805-529-6692
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:
Receive Date: 20190925
Handler Name: MURANAKA FARM INC
Federal Waste Generator Description: Not a generator, verified
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:
NAICS Code: 111219
NAICS Description: OTHER VEGETABLE (EXCEPT POTATO) AND MELON FARMING

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

C10 **MURANKA FARM INC** **RCRA-SQG** **1000595942**
ESE **11128 LOS ANGELES AVE** **FINDS** **CAD983599002**
1/8-1/4 **MOORPARK, CA 93021** **ECHO**
0.194 mi.
1023 ft. **Site 2 of 2 in cluster C**

Relative:
Higher

Actual:
454 ft.

RCRA-SQG:
Date Form Received by Agency: 19910809
Handler Name: MURANKA FARM INC
Handler Address: 11128 LOS ANGELES AVE
Handler City,State,Zip: MOORPARK, CA 93021
EPA ID: CAD983599002
Contact Name: MIGUEL MAGDELANO
Contact Address: 11128 LOS ANGELES AVE
Contact City,State,Zip: MOORPARK, CA 93021
Contact Telephone: 805-529-0209

DRAFT

MURANKA FARM INC (Continued) **1000595942**

Contact Fax:	Not reported
Contact Email:	Not reported
Contact Title:	Not reported
EPA Region:	09
Land Type:	Other
Federal Waste Generator Description:	Small Quantity Generator
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Handler Activities
State District Owner:	CA
State District:	4R
Mailing Address:	16014 CHATSWORTH ST
Mailing City,State,Zip:	GRANADA HILLS, CA 91344
Owner Name:	MURANAKA FARM INC
Owner Type:	Private
Operator Name:	NOT REQUIRED
Operator Type:	Private
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	NN
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A

DRAFT

MURANKA FARM INC (Continued) **1000595942**

Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20020627
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	Not reported
Manifest Broker:	Not reported
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name:	MURANAKA FARM INC
Legal Status:	Private
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	NOT REQUIRED
Owner/Operator City,State,Zip:	NOT REQUIRED, ME 99999
Owner/Operator Telephone:	415-555-1212
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	NOT REQUIRED
Legal Status:	Private
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	NOT REQUIRED
Owner/Operator City,State,Zip:	NOT REQUIRED, ME 99999
Owner/Operator Telephone:	415-555-1212
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	19910809
Handler Name: MURANKA FARM INC	
Federal Waste Generator Description:	Small Quantity Generator
State District Owner:	CA
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	Yes
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

DRAFT

MURANKA FARM INC (Continued) **1000595942**

List of NAICS Codes and Descriptions:
NAICS Codes: No NAICS Codes Found

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

FINDS:
Registry ID: 110002855991

Click Here:

Environmental Interest/Information System:
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.
ICIS (Integrated Compliance Information System) is the Integrated Compliance Information System and provides a database that, when complete, will contain integrated Enforcement and Compliance information across most of EPA's programs. The vision for ICIS is to replace EPA's independent databases that contain Enforcement data with a single repository for that information. Currently, ICIS contains all Federal Administrative and Judicial enforcement actions. This information is maintained in ICIS by EPA in the Regional offices and it Headquarters. A future release of ICIS will replace the Permit Compliance System (PCS) which supports the NPDES and will integrate that information with Federal actions already in the system. ICIS also has the capability to track other activities occurring in the Region that support Compliance and Enforcement programs. These include; Incident Tracking, Compliance Assistance, and Compliance Monitoring.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1000595942
Registry ID:	110002855991
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110002855991
Name:	MURANKA FARM INC
Address:	11128 LOS ANGELES AVE
City,State,Zip:	MOORPARK, CA 93021

DRAFT

11
WNW
1/4-1/2
0.321 mi.
1694 ft.

PEACH HILL ORGANIC RECYCLING
10765 LOS ANGELES AVE.
MOORPARK, CA 93021

SWF/LF **S106079189**
CERS HAZ WASTE **N/A**
CERS TANKS
VENTURA CO. BWT
CERS

Relative:
Lower

Actual:
446 ft.

LOS ANGELES CO. LF:

Name:	PEACH HILL ORGANIC RECYCLING
Address:	10765 LOS ANGELES AVE.
City,State,Zip:	MOORPARK, CA 93021
Site ID:	2706
Alt. Site Name:	N/A
Alt. Address:	N/A
Site Contact:	Not reported
Site Contact Phone:	(805) 529-6164
Site Email:	phsoils@aol.com
Site Website:	N/A
Site Type:	Out-of-County Facility
Site SWIS Number:	56-AA-0142
Beginning Operation Date:	N/A
Ending Operation Date:	N/A
Local Enforcement Agency:	County of Ventura
Maximun Depth Fill(Ft):	Not reported
Permitted Capacity:	300
Present Use:	Composting Operation (Green Waste)
Remaining Capacity(Million):	N/A
Status:	Active
Waste Accepted:	Agricultural;Green Materials;Manure;
Hours of Operation:	Monday-Friday 7 AM-4 PM Saturday 7 AM -1 PM
Disposal Area (Acre):	Not reported

Detail As Of 01/2014:

Operator Name:	Unknown
Operator Address:	Not reported
Operator City/State/Zip:	Not reported
Operator Contact:	Not reported
Operator Telephone:	Not reported
Operator Email:	Not reported
Owner Name:	Unknown
Owner Address:	Not reported
Owner City/State/Zip:	Not reported
Owner Contact:	Not reported
Owner Telephone:	Not reported
Owner Email:	Not reported
District:	Not reported
Site Mailing Address:	N/A

SWF/LF (SWIS):

Name:	PEACH HILL ORGANIC RECYCLING
Address:	10765 LOS ANGELES
City,State,Zip:	MOORPARK, CA 93021
Region:	STATE
Facility ID:	56-AA-0142
SWIS Number:	56-AA-0142
Point of Contact:	Theodore Tasiopoulos
Is Archived:	No
Is Closed Illegal Abandoned:	No
Is Site Inert Debris Engineered Fill:	No
Is Financial Assurances Responsible:	No

DRAFT

PEACH HILL ORGANIC RECYCLING (Continued) **S106079189**

Absorbed On:	Not reported
Operational Status:	Active
Absorbed By:	Not reported
Closed Illegal Abandoned Category:	Not reported
EPA Federal Registry ID:	Not reported
ARB District:	Ventura
SWRCB Region:	Los Angeles
Local Government:	Moorpark
Reporting Agency Legal Name:	County of Ventura
Reporting Agency Department:	County Resource Management Agency, Environmental Health Division
Enforcing Agency Legal Name:	County of Ventura
Enforcing Agency Department:	County Resource Management Agency, Environmental Health Division
Regulation Status:	Notification

Activity:

SWIS Number:	56-AA-0142
Site Name:	Peach Hill Organic Recycling
Activity:	Agricultural Material Composting Operation
Activity Is Archived:	No
Category:	Composting
Activity Classification:	Solid Waste Operation
WDR Number:	Not reported
WDR Landfill Class:	Not reported
Cease Operation:	Not reported
Cease Operation Type:	Not reported
Inspection Frequency:	Quarterly
Throughput:	300
Throughput Units:	Cubic Yards per Day
Remaining Capacity:	Not reported
Remaining Capacity Date:	Not reported
Capacity:	30000
Capacity Units:	Cubic Yards
Total Acreage:	27
Disposal Acreage:	Not reported
Permitted Elevation:	Not reported
Permitted Elevation Type:	Not reported
Permitted Depth:	Not reported
Permitted Depth Type:	Not reported
Point of Contact:	Theodore Tasiopoulos
Site Operational Status:	Active
Site Regulatory Status:	Notification
Site Is Archived:	No
Is Closed Illegal Abandoned:	No
Is Site Inert Debris Engineered Fill:	No
Is Financial Assurances Responsible:	No
Absorbed On:	Not reported
Absorbed By:	Not reported
Closed Illegal Abandoned Category:	Not reported
EPA Federal Registry ID:	Not reported
County:	Ventura
ARB District:	Ventura
SWRCB Region:	Los Angeles
Local Government:	Moorpark
Street Address:	10765 Los Angeles
City:	Moorpark
State:	CA
ZIP Code:	93021
Reporting Agency Legal Name:	County of Ventura

DRAFT

PEACH HILL ORGANIC RECYCLING (Continued) **S106079189**

Reporting Agency Department: County Resource Management Agency, Environmental Health Division
Enforcing Agency Legal Name: County of Ventura
Enforcing Agency Department: County Resource Management Agency, Environmental Health Division

Operator:
SWIS Number: 56-AA-0142
Site Name: Peach Hill Organic Recycling
Site Operational Status: Active
Site Type: Non-Disposal Only
Site Regulatory Status: Notification
Latitude: 34.28556
Longitude: -118.91817
Is Archived: No
Operator: Medrano, Robert R.
Started On: 10/6/2003
Contact Name: Not reported
Contact Title: Not reported
Contact Email: Not reported
Contact Phone: (805) 529-6164
Street Address: PO Box 158
Operator City: Moorpark
Operator State: CA
Operator Zip: 93020

Owner:
SWIS Number: 56-AA-0142
Owner: Consfantino, Noval Living Trust
Owner Address: PO Box 65143
Owner City: Los Angeles
Owner State: CA
Owner Zip: 90065
Site Name: Peach Hill Organic Recycling
Site Operational Status: Active
Site Type: Non-Disposal Only
Site Regulatory Status: Notification
Latitude: 34.28556
Longitude: -118.91817
Is Archived: No
Started On: 10/6/2003
Contact Name: Not reported
Contact Title: Not reported
Contact Email: Not reported
Contact Phone: Not reported

Waste:
SWIS Number: 56-AA-0142
Site Name: Peach Hill Organic Recycling
Activity: Agricultural Material Composting Operation
Waste Type: Agricultural
Site Is Archived: No
Site Operational Status: Active
Site Regulatory Status: Notification
Site Type: Non-Disposal Only
Point of Contact: Theodore Tasiopoulos
Activity Is Archived: No
Activity Operational Status: Active

DRAFT

PEACH HILL ORGANIC RECYCLING (Continued) **S106079189**

Activity Regulatory Status:	Notification
Activity Category:	Composting
Activity Classification:	Solid Waste Operation
SWIS Number:	56-AA-0142
Site Name:	Peach Hill Organic Recycling
Activity:	Agricultural Material Composting Operation
Waste Type:	Green Materials
Site Is Archived:	No
Site Operational Status:	Active
Site Regulatory Status:	Notification
Site Type:	Non-Disposal Only
Point of Contact:	Theodore Tasiopoulos
Activity Is Archived:	No
Activity Operational Status:	Active
Activity Regulatory Status:	Notification
Activity Category:	Composting
Activity Classification:	Solid Waste Operation

CERS HAZ WASTE:

Name:	PEACH HILL SOILS
Address:	10765 LOS ANGELES AVE
City,State,Zip:	MOORPARK, CA 93021
Site ID:	55892
CERS ID:	10336807
CERS Description:	Hazardous Waste Generator

CERS TANKS:

Name:	PEACH HILL SOILS
Address:	10765 LOS ANGELES AVE
City,State,Zip:	MOORPARK, CA 93021
Site ID:	55892
CERS ID:	10336807
CERS Description:	Aboveground Petroleum Storage

VENTURA CO. BWT:

Name:	PEACH HILL SOILS
Address:	10765 LOS ANGELES AVE
City,State,Zip:	MOORPARK, CA
Facility ID:	FA0008929
Program:	HAZARDOUS WASTE GENERATOR/BUSINESS PLAN/ABOVEGROUND PETROLEUM TANKS
Name:	PEACH HILL SOILS
Address:	10765 LOS ANGELES AVE
City,State,Zip:	MOORPARK, CA
Facility ID:	HM 3047
Program:	Not reported

CERS:

Name:	PEACH HILL ORGANIC RECYCLING
Address:	10765 LOS ANGELES
City,State,Zip:	MOORPARK, CA
Site ID:	510894
CERS ID:	56-AA-0142

DRAFT

PEACH HILL ORGANIC RECYCLING (Continued) **S106079189**

CERS Description: Solid Waste and Recycle Sites

Affiliation:
Affiliation Type Desc: Legal Owner
Entity Name: Consfantino, Noval Living Trust
Entity Title: Not reported
Affiliation Address: Noval ConsfantinoP O Box 65143
Affiliation City: Los Angeles
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 90065
Affiliation Phone: Not reported

Affiliation Type Desc: Legal Operator
Entity Name: Medrano, Robert R.
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Moorpark
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 93021
Affiliation Phone: 8055296164

Name: PEACH HILL SOILS
Address: 10765 LOS ANGELES AVE
City,State,Zip: MOORPARK, CA 93021
Site ID: 55892
CERS ID: 10336807
CERS Description: Chemical Storage Facilities

Violations:
Site ID: 55892
Site Name: PEACH HILL SOILS
Violation Date: 02-23-2021
Citation: 40 CFR 1 265.31 - U.S. Code of Federal Regulations, Title 40, Chapter 1, Section(s) 265.31
Violation Description: Failure to maintain and operate the facility to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.
Violation Notes: Returned to compliance on 02/23/2021.
Violation Division: Ventura County Environmental Health
Violation Program: HW
Violation Source: CERS

Site ID: 55892
Site Name: PEACH HILL SOILS
Violation Date: 02-16-2021
Citation: HSC 6.5 25160.2 - California Health and Safety Code, Chapter 6.5, Section(s) 25160.2
Violation Description: Failure of a generator of hazardous waste that meets the conditions to be transported on a consolidated manifest to comply with one or more of the required consolidated manifesting procedures and retain copies of receipts for three years.
Violation Notes: Returned to compliance on 02/23/2021.
Violation Division: Ventura County Environmental Health

DRAFT

PEACH HILL ORGANIC RECYCLING (Continued) **S106079189**

Violation Program: HW
Violation Source: CERS

Site ID: 55892
Site Name: PEACH HILL SOILS
Violation Date: 02-16-2021
Citation: 22 CCR 11 66261.7 - California Code of Regulations, Title 22, Chapter 11, Section(s) 66261.7
Violation Description: Failure to manage empty containers greater than 5 gallons in capacity that previously held a hazardous material/waste in accordance with 22 CCR 11 66261.7 including but not limited to the following: (e)(2)By reclaiming its scrap value onsite or shipping the container or inner liner to a person who reclaims its scrap value; or (3) By reconditioning or re manufacturing the container or inner liner onsite for subsequent reuse, or shipping the container or inner liner to a person who reconditions or re-manufactures the container or inner liner; or (4) By shipping the container or inner liner to a supplier or to another intermediate collection location for accumulation prior to managing the container or inner liner pursuant to subsections (e)(2) or (e)(3) of 22 CCR 11 66261.7; or (i) By shipping the container or inner liner back to the supplier for the purpose of being refilled. (f) A container or an inner liner removed from a container larger than five gallons in capacity which is managed pursuant to subsection (e) of 22 CCR 11 66261.7 shall be marked with the date it has been emptied and shall be managed within one year of being emptied.
Violation Notes: Returned to compliance on 02/23/2021.
Violation Division: Ventura County Environmental Health
Violation Program: HW
Violation Source: CERS

Site ID: 55892
Site Name: PEACH HILL SOILS
Violation Date: 02-23-2021
Citation: HSC 6.95 25508.1(a)-(f) - California Health and Safety Code, Chapter 6.95, Section(s) 25508.1(a)-(f)
Violation Description: Failure to electronically update business plan within 30 days of any one of the following events: A 100 percent or more increase in the quantity of a previously disclosed material. Any handling of a previously undisclosed hazardous materials at or above reportable quantities. A change of business address, business ownership, or business name. A substantial change in the handler's operations that requires modification to any portion of the business plan.
Violation Notes: Returned to compliance on 02/23/2021.
Violation Division: Ventura County Environmental Health
Violation Program: HMRRP
Violation Source: CERS

Site ID: 55892
Site Name: PEACH HILL SOILS
Violation Date: 02-23-2021
Citation: HSC 6.95 25505(c) - California Health and Safety Code, Chapter 6.95, Section(s) 25505(c)
Violation Description: Failure to have a business plan readily available to personnel of the business or the unified program facility with responsibilities for emergency response or training.
Violation Notes: Returned to compliance on 02/23/2021.

DRAFT

PEACH HILL ORGANIC RECYCLING (Continued) **S106079189**

Violation Division:	Ventura County Environmental Health
Violation Program:	HMRRP
Violation Source:	CERS
Site ID:	55892
Site Name:	PEACH HILL SOILS
Violation Date:	02-16-2021
Citation:	40 CFR 1 265.174 - U.S. Code of Federal Regulations, Title 40, Chapter 1, Section(s) 265.174
Violation Description:	Failure to inspect hazardous waste storage areas at least weekly and look for leaking and deteriorating containers.
Violation Notes:	Returned to compliance on 02/23/2021.
Violation Division:	Ventura County Environmental Health
Violation Program:	HW
Violation Source:	CERS
Site ID:	55892
Site Name:	PEACH HILL SOILS
Violation Date:	02-23-2021
Citation:	HSC 6.5 25160.2 - California Health and Safety Code, Chapter 6.5, Section(s) 25160.2
Violation Description:	Failure of a generator of hazardous waste that meets the conditions to be transported on a consolidated manifest to comply with one or more of the required consolidated manifesting procedures and retain copies of receipts for three years.
Violation Notes:	Returned to compliance on 02/23/2021.
Violation Division:	Ventura County Environmental Health
Violation Program:	HW
Violation Source:	CERS
Site ID:	55892
Site Name:	PEACH HILL SOILS
Violation Date:	02-23-2021
Citation:	22 CCR 11 66261.7 - California Code of Regulations, Title 22, Chapter 11, Section(s) 66261.7
Violation Description:	Failure to manage empty containers greater than 5 gallons in capacity that previously held a hazardous material/waste in accordance with 22 CCR 11 66261.7 including but not limited to the following: (e)(2)By reclaiming its scrap value onsite or shipping the container or inner liner to a person who reclaims its scrap value; or (3) By reconditioning or re manufacturing the container or inner liner onsite for subsequent reuse, or shipping the container or inner liner to a person who reconditions or re-manufactures the container or inner liner; or (4) By shipping the container or inner liner to a supplier or to another intermediate collection location for accumulation prior to managing the container or inner liner pursuant to subsections (e)(2) or (e)(3) of 22 CCR 11 66261.7; or (i) By shipping the container or inner liner back to the supplier for the purpose of being refilled. (f) A container or an inner liner removed from a container larger than five gallons in capacity which is managed pursuant to subsection (e) of 22 CCR 11 66261.7 shall be marked with the date it has been emptied and shall be managed within one year of being emptied.
Violation Notes:	Returned to compliance on 02/23/2021.
Violation Division:	Ventura County Environmental Health
Violation Program:	HW
Violation Source:	CERS

DRAFT

PEACH HILL ORGANIC RECYCLING (Continued) **S106079189**

Site ID:	55892
Site Name:	PEACH HILL SOILS
Violation Date:	02-16-2021
Citation:	HSC 6.95 25508.1(a)-(f) - California Health and Safety Code, Chapter 6.95, Section(s) 25508.1(a)-(f)
Violation Description:	Failure to electronically update business plan within 30 days of any one of the following events: A 100 percent or more increase in the quantity of a previously disclosed material. Any handling of a previously undisclosed hazardous materials at or above reportable quantities. A change of business address, business ownership, or business name. A substantial change in the handler's operations that requires modification to any portion of the business plan.
Violation Notes:	Returned to compliance on 02/23/2021.
Violation Division:	Ventura County Environmental Health
Violation Program:	HMRRP
Violation Source:	CERS

Site ID:	55892
Site Name:	PEACH HILL SOILS
Violation Date:	02-16-2021
Citation:	40 CFR 1 265.31 - U.S. Code of Federal Regulations, Title 40, Chapter 1, Section(s) 265.31
Violation Description:	Failure to maintain and operate the facility to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.
Violation Notes:	Returned to compliance on 02/23/2021.
Violation Division:	Ventura County Environmental Health
Violation Program:	HW
Violation Source:	CERS

Site ID:	55892
Site Name:	PEACH HILL SOILS
Violation Date:	02-16-2021
Citation:	HSC 6.95 25505(c) - California Health and Safety Code, Chapter 6.95, Section(s) 25505(c)
Violation Description:	Failure to have a business plan readily available to personnel of the business or the unified program facility with responsibilities for emergency response or training.
Violation Notes:	Returned to compliance on 02/23/2021.
Violation Division:	Ventura County Environmental Health
Violation Program:	HMRRP
Violation Source:	CERS

Site ID:	55892
Site Name:	PEACH HILL SOILS
Violation Date:	02-23-2021
Citation:	22 CCR 12 66262.11 - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.11
Violation Description:	Failure to determine if wastes generated are hazardous waste by using generator knowledge or applying testing method.
Violation Notes:	Returned to compliance on 02/23/2021.
Violation Division:	Ventura County Environmental Health
Violation Program:	HW
Violation Source:	CERS

DRAFT

PEACH HILL ORGANIC RECYCLING (Continued) **S106079189**

Site ID:	55892
Site Name:	PEACH HILL SOILS
Violation Date:	02-23-2021
Citation:	22 CCR 12 66262.34(f) - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.34(f)
Violation Description:	Failure to properly label hazardous waste accumulation containers and portable tanks with the following requirements: "Hazardous Waste", name and address of the generator, physical and chemical characteristics of the Hazardous Waste, and starting accumulation date.
Violation Notes:	Returned to compliance on 02/23/2021.
Violation Division:	Ventura County Environmental Health
Violation Program:	HW
Violation Source:	CERS

Site ID:	55892
Site Name:	PEACH HILL SOILS
Violation Date:	12-21-2015
Citation:	22 CCR 12 66262.40(a) - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.40(a)
Violation Description:	Failure to maintain uniform hazardous waste manifest, consolidated manifest, or bills of lading copies for three years.
Violation Notes:	Returned to compliance on 12/22/2015.
Violation Division:	Ventura County Environmental Health
Violation Program:	HW
Violation Source:	CERS

Site ID:	55892
Site Name:	PEACH HILL SOILS
Violation Date:	02-16-2021
Citation:	22 CCR 12 66262.11 - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.11
Violation Description:	Failure to determine if wastes generated are hazardous waste by using generator knowledge or applying testing method.
Violation Notes:	Returned to compliance on 02/22/2021.
Violation Division:	Ventura County Environmental Health
Violation Program:	HW
Violation Source:	CERS

Site ID:	55892
Site Name:	PEACH HILL SOILS
Violation Date:	02-23-2021
Citation:	40 CFR 1 265.174 - U.S. Code of Federal Regulations, Title 40, Chapter 1, Section(s) 265.174
Violation Description:	Failure to inspect hazardous waste storage areas at least weekly and look for leaking and deteriorating containers.
Violation Notes:	Returned to compliance on 02/23/2021.
Violation Division:	Ventura County Environmental Health
Violation Program:	HW
Violation Source:	CERS

Site ID:	55892
Site Name:	PEACH HILL SOILS
Violation Date:	02-16-2021
Citation:	22 CCR 12 66262.34(f) - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.34(f)
Violation Description:	Failure to properly label hazardous waste accumulation containers and

DRAFT

PEACH HILL ORGANIC RECYCLING (Continued) **S106079189**

portable tanks with the following requirements: "Hazardous Waste", name and address of the generator, physical and chemical characteristics of the Hazardous Waste, and starting accumulation date.

Violation Notes: Returned to compliance on 02/23/2021.
Violation Division: Ventura County Environmental Health
Violation Program: HW
Violation Source: CERS

Evaluation:

Eval General Type: Compliance Evaluation Inspection
Eval Date: 02-16-2021
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Ventura County Environmental Health
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 02-23-2021
Violations Found: Yes
Eval Type: Other, not routine, done by local agency
Eval Notes: INSPECTION FOLLOW-UP
Eval Division: Ventura County Environmental Health
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 07-08-2014
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Ventura County Environmental Health
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 02-16-2021
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Ventura County Environmental Health
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 07-08-2014
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Ventura County Environmental Health
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 12-21-2015

DRAFT

PEACH HILL ORGANIC RECYCLING (Continued) **S106079189**

Violations Found:	Yes
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	Ventura County Environmental Health
Eval Program:	HW
Eval Source:	CERS
Eval General Type:	Other/Unknown
Eval Date:	02-23-2021
Violations Found:	Yes
Eval Type:	Other, not routine, done by local agency
Eval Notes:	FOLLOW-UP INSPECTION
Eval Division:	Ventura County Environmental Health
Eval Program:	HMRRP
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	05-08-2018
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	Ventura County Environmental Health
Eval Program:	HMRRP
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	05-08-2018
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	Ventura County Environmental Health
Eval Program:	HW
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	12-21-2015
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	Ventura County Environmental Health
Eval Program:	HMRRP
Eval Source:	CERS

Coordinates:

Site ID:	55892
Facility Name:	PEACH HILL SOILS
Env Int Type Code:	HWG
Program ID:	10336807
Coord Name:	Not reported
Ref Point Type Desc:	Center of a facility or station.
Latitude:	34.278930
Longitude:	-118.919790

Affiliation:

Affiliation Type Desc:	CUPA District
Entity Name:	Ventura County Environmental Health

DRAFT

PEACH HILL ORGANIC RECYCLING (Continued) **S106079189**

Entity Title:	Not reported
Affiliation Address:	800 South Victoria Avenue
Affiliation City:	Ventura
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	93009
Affiliation Phone:	(805) 654-2813
Affiliation Type Desc:	Parent Corporation
Entity Name:	PEACH HILL SOILS
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Document Preparer
Entity Name:	Lisa Medrano
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Environmental Contact
Entity Name:	ROBERT MEDRANO
Entity Title:	Not reported
Affiliation Address:	PO BOX 158
Affiliation City:	MOORPARK
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	93021
Affiliation Phone:	Not reported
Affiliation Type Desc:	Identification Signer
Entity Name:	lisa Medrano
Entity Title:	Secretary
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported
Affiliation Address:	PO BOX 158
Affiliation City:	MOORPARK
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	93021
Affiliation Phone:	Not reported

DRAFT

PEACH HILL ORGANIC RECYCLING (Continued) **S106079189**

Affiliation Type Desc:	Legal Owner
Entity Name:	ROBERT MEDRANO
Entity Title:	Not reported
Affiliation Address:	P O Box 158
Affiliation City:	Moorpark
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	93021
Affiliation Phone:	(805) 857-4709

Affiliation Type Desc:	Operator
Entity Name:	ROBERT MEDRANO
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(805) 857-4709

12
WSW
1/4-1/2
0.345 mi.
1821 ft.

PEACH HILL ORGANIC RECYCLING **LOS ANGELES CO LF METHANE** **S127128171**
, CA **N/A**

Relative:
Lower

Actual:
439 ft.

LOS ANGELES CO LF METHANE:

Name:	PEACH HILL ORGANIC RECYCLING
Address:	Not reported
City,State,Zip:	CA
Site Number:	2706
Status:	Not reported
Description:	Not reported
Operator Name:	Not reported
Operator Telephone:	Not reported
Sup District:	Not reported
Shape Length:	313.7607
Shape Area:	7814.1692947
Latitude:	34.278860256
Longitude:	-118.91902111

13
ENE
1/2-1
0.976 mi.
5153 ft.

VIKING ELECTRONICS INC **ENVIROSTOR** **S104579043**
5455 ENDEAVOUR CT **WDS** **N/A**
MOORPARK, CA 93021

Relative:
Higher

Actual:
483 ft.

ENVIROSTOR:

Name:	VIKING ELECTRONICS, INC
Address:	5455 ENDEAVOUR CT
City,State,Zip:	MOORPARK, CA 93021
Facility ID:	71003350
Status:	Refer: Other Agency
Status Date:	Not reported
Site Code:	Not reported

DRAFT

VIKING ELECTRONICS INC (Continued) **S104579043**

Site Type: Tiered Permit
Site Type Detailed: Tiered Permit
Acres: Not reported
NPL: NO
Regulatory Agencies: NONE SPECIFIED
Lead Agency: NONE SPECIFIED
Program Manager: Not reported
Supervisor: Not reported
Division Branch: Cleanup Chatsworth
Assembly: 44
Senate: 27
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: Not reported
Latitude: 34.28387
Longitude: -118.8948
APN: NONE SPECIFIED
Past Use: NONE SPECIFIED
Potential COC: NONE SPECIFIED
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: CAL000140644
Alias Type: EPA Identification Number
Alias Name: 71003350
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: Not reported
Completed Sub Area Name: Not reported
Completed Document Type: Not reported
Completed Date: Not reported
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

WDS:
Name: VIKING ELECTRONICS INC
Address: 5455 Endeavour Ct
City: MOORPARK
Facility ID: 4 56I014978
Facility Type: Industrial - Facility that treats and/or disposes of liquid or semisolid wastes from any servicing, producing, manufacturing or processing operation of whatever nature, including mining, gravel washing, geothermal operations, air conditioning, ship building and repairing, oil production, storage and disposal operations, water pumping.
Facility Status: Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.

DRAFT

VIKING ELECTRONICS INC (Continued) **S104579043**

NPDES Number:	CAS000001 The 1st 2 characters designate the state. The remaining 7 are assigned by the Regional Board
Subregion:	4
Facility Telephone:	8055539655
Facility Contact:	JUSTIN KILLGORE
Agency Name:	VIKING ELECTRONICS INC
Agency Address:	5455 Endeavour Ct
Agency City,St,Zip:	Moorpark 930211712
Agency Contact:	JUSTIN KILLGORE
Agency Telephone:	8055539655
Agency Type:	Private
SIC Code:	0
SIC Code 2:	Not reported
Primary Waste Type:	Not reported
Primary Waste:	Not reported
Waste Type2:	Not reported
Waste2:	Not reported
Primary Waste Type:	Not reported
Secondary Waste:	Not reported
Secondary Waste Type:	Not reported
Design Flow:	0
Baseline Flow:	0
Reclamation:	Not reported
POTW:	Not reported
Treat To Water:	Minor Threat to Water Quality. A violation of a regional board order should cause a relatively minor impairment of beneficial uses compared to a major or minor threat. Not: All nurds without a TTWQ will be considered a minor threat to water quality unless coded at a higher Level. A Zero (0) may be used to code those NURDS that are found to represent no threat to water quality.
Complexity:	Category C - Facilities having no waste treatment systems, such as cooling water dischargers or thosewho must comply through best management practices, facilities with passive waste treatment and disposal systems, such as septic systems with subsurface disposal, or dischargers having waste storage systems with land disposal such as dairy waste ponds.

DRAFT

Count: 0 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
		NO SITES FOUND			

DRAFT

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 07/29/2021
Date Data Arrived at EDR: 08/04/2021
Date Made Active in Reports: 08/31/2021
Number of Days to Update: 27

Source: EPA
Telephone: N/A
Last EDR Contact: 10/01/2021
Next Scheduled EDR Contact: 01/10/2022
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 07/29/2021
Date Data Arrived at EDR: 08/04/2021
Date Made Active in Reports: 08/31/2021
Number of Days to Update: 27

Source: EPA
Telephone: N/A
Last EDR Contact: 10/01/2021
Next Scheduled EDR Contact: 01/10/2022
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

DRAFT

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Federal Delisted NPL site list

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 07/29/2021
Date Data Arrived at EDR: 08/04/2021
Date Made Active in Reports: 08/31/2021
Number of Days to Update: 27

Source: EPA
Telephone: N/A
Last EDR Contact: 10/01/2021
Next Scheduled EDR Contact: 01/10/2022
Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 05/25/2021
Date Data Arrived at EDR: 06/24/2021
Date Made Active in Reports: 09/20/2021
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 10/01/2021
Next Scheduled EDR Contact: 01/10/2022
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 07/29/2021
Date Data Arrived at EDR: 08/04/2021
Date Made Active in Reports: 08/31/2021
Number of Days to Update: 27

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 10/01/2021
Next Scheduled EDR Contact: 01/24/2022
Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

DRAFT

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 07/29/2021
Date Data Arrived at EDR: 08/04/2021
Date Made Active in Reports: 08/31/2021
Number of Days to Update: 27

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 10/01/2021
Next Scheduled EDR Contact: 01/24/2022
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 09/13/2021
Date Data Arrived at EDR: 09/15/2021
Date Made Active in Reports: 10/12/2021
Number of Days to Update: 27

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 09/15/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 09/13/2021
Date Data Arrived at EDR: 09/15/2021
Date Made Active in Reports: 10/12/2021
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/15/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 09/13/2021
Date Data Arrived at EDR: 09/15/2021
Date Made Active in Reports: 10/12/2021
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/15/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Quarterly

DRAFT

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 09/13/2021
Date Data Arrived at EDR: 09/15/2021
Date Made Active in Reports: 10/12/2021
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/15/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Quarterly

RCRA-VSQG: RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Very small quantity generators (VSQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 09/13/2021
Date Data Arrived at EDR: 09/15/2021
Date Made Active in Reports: 10/12/2021
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/15/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 07/12/2021
Date Data Arrived at EDR: 08/06/2021
Date Made Active in Reports: 10/22/2021
Number of Days to Update: 77

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 08/05/2021
Next Scheduled EDR Contact: 11/22/2021
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 05/17/2021
Date Data Arrived at EDR: 05/21/2021
Date Made Active in Reports: 08/11/2021
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 08/23/2021
Next Scheduled EDR Contact: 12/06/2021
Data Release Frequency: Varies

US INST CONTROLS: Institutional Controls Sites List

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 05/17/2021
Date Data Arrived at EDR: 05/21/2021
Date Made Active in Reports: 08/11/2021
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 08/23/2021
Next Scheduled EDR Contact: 12/06/2021
Data Release Frequency: Varies

DRAFT

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 06/14/2021
Date Data Arrived at EDR: 06/17/2021
Date Made Active in Reports: 08/17/2021
Number of Days to Update: 61

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 09/21/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Quarterly

State- and tribal - equivalent NPL

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 07/22/2021
Date Data Arrived at EDR: 07/22/2021
Date Made Active in Reports: 10/08/2021
Number of Days to Update: 78

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 10/26/2021
Next Scheduled EDR Contact: 02/07/2022
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 07/22/2021
Date Data Arrived at EDR: 07/22/2021
Date Made Active in Reports: 10/08/2021
Number of Days to Update: 78

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 10/26/2021
Next Scheduled EDR Contact: 02/07/2022
Data Release Frequency: Quarterly

State and tribal landfill and/or solid waste disposal site lists

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 05/10/2021
Date Data Arrived at EDR: 05/11/2021
Date Made Active in Reports: 07/27/2021
Number of Days to Update: 77

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 08/10/2021
Next Scheduled EDR Contact: 11/22/2021
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

DRAFT

LUST REG 5: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST: Leaking Underground Fuel Tank Report (GEOTRACKER)

Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Quarterly

LUST REG 9: Leaking Underground Storage Tank Report

Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks

California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

LUST REG 7: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List

Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

DRAFT

LUST REG 3: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List
Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: No Update Planned

LUST REG 1: Active Toxic Site Investigation
Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 04/06/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 10/22/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 05/17/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 10/22/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

DRAFT

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 05/28/2021
Date Data Arrived at EDR: 06/22/2021
Date Made Active in Reports: 09/20/2021
Number of Days to Update: 90
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 10/22/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 04/27/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88
Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 10/22/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 05/27/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88
Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 10/22/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 05/27/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 10/22/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 06/01/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 10/22/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 04/28/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88
Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 10/22/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

CPS-SLIC: Statewide SLIC Cases (GEOTRACKER)
Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Varies

DRAFT

SLIC REG 1: Active Toxic Site Investigations
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: No Update Planned

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

DRAFT

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35
Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36
Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11
Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: No Update Planned

State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/29/2021
Date Data Arrived at EDR: 02/17/2021
Date Made Active in Reports: 03/22/2021
Number of Days to Update: 33
Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 09/30/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Varies

MILITARY UST SITES: Military UST Sites (GEOTRACKER)
Military ust sites

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Varies

DRAFT

UST: Active UST Facilities

Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Semi-Annually

UST CLOSURE: Proposed Closure of Underground Storage Tank (UST) Cases

UST cases that are being considered for closure by either the State Water Resources Control Board or the Executive Director have been posted for a 60-day public comment period. UST Case Closures being proposed for consideration by the State Water Resources Control Board. These are primarily UST cases that meet closure criteria under the decisional framework in State Water Board Resolution No. 92-49 and other Board orders. UST Case Closures proposed for consideration by the Executive Director pursuant to State Water Board Resolution No. 2012-0061. These are cases that meet the criteria of the Low-Threat UST Case Closure Policy. UST Case Closure Review Denials and Approved Orders.

Date of Government Version: 05/20/2021
Date Data Arrived at EDR: 06/04/2021
Date Made Active in Reports: 08/30/2021
Number of Days to Update: 87

Source: State Water Resources Control Board
Telephone: 916-327-7844
Last EDR Contact: 09/08/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Varies

AST: Aboveground Petroleum Storage Tank Facilities

A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 07/06/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 09/19/2016
Number of Days to Update: 69

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 09/09/2021
Next Scheduled EDR Contact: 12/27/2021
Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 04/28/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 10/22/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 06/01/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 10/22/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 05/27/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 10/22/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

DRAFT

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 04/27/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 10/22/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 05/27/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 10/22/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 05/17/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 10/22/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 05/28/2021
Date Data Arrived at EDR: 06/22/2021
Date Made Active in Reports: 09/20/2021
Number of Days to Update: 90

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 10/22/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 04/06/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 10/22/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

VCP: Voluntary Cleanup Program Properties

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 07/22/2021
Date Data Arrived at EDR: 07/22/2021
Date Made Active in Reports: 10/08/2021
Number of Days to Update: 78

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 10/26/2021
Next Scheduled EDR Contact: 02/07/2022
Data Release Frequency: Quarterly

DRAFT

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 07/08/2021
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 09/15/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Varies

State and tribal Brownfields sites

BROWNFIELDS: Considered Brownfieds Sites Listing
A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 06/17/2021
Date Data Arrived at EDR: 06/17/2021
Date Made Active in Reports: 09/13/2021
Number of Days to Update: 88

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 09/21/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Quarterly

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 06/10/2021
Date Data Arrived at EDR: 06/10/2021
Date Made Active in Reports: 08/17/2021
Number of Days to Update: 68

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 09/14/2021
Next Scheduled EDR Contact: 12/27/2021
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT: Waste Management Unit Database
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

DRAFT

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 10/22/2021
Next Scheduled EDR Contact: 02/07/2022
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 06/04/2021
Date Data Arrived at EDR: 06/04/2021
Date Made Active in Reports: 08/27/2021
Number of Days to Update: 84

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 09/08/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 11/23/2020
Date Data Arrived at EDR: 11/23/2020
Date Made Active in Reports: 02/08/2021
Number of Days to Update: 77

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 08/17/2021
Next Scheduled EDR Contact: 11/22/2021
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 10/22/2021
Next Scheduled EDR Contact: 02/07/2022
Data Release Frequency: Varies

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 10/14/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land
A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 10/28/2021
Next Scheduled EDR Contact: 02/07/2022
Data Release Frequency: Varies

DRAFT

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 05/18/2021
Date Data Arrived at EDR: 05/18/2021
Date Made Active in Reports: 08/03/2021
Number of Days to Update: 77

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 08/17/2021
Next Scheduled EDR Contact: 12/06/2021
Data Release Frequency: No Update Planned

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 07/22/2021
Date Data Arrived at EDR: 07/22/2021
Date Made Active in Reports: 10/08/2021
Number of Days to Update: 78

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 10/26/2021
Next Scheduled EDR Contact: 02/07/2022
Data Release Frequency: Quarterly

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 01/20/2021
Date Made Active in Reports: 04/08/2021
Number of Days to Update: 78

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 10/29/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Varies

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

CERS HAZ WASTE: CERS HAZ WASTE

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA LQ HW Generator programs.

DRAFT

Date of Government Version: 07/15/2021
Date Data Arrived at EDR: 07/15/2021
Date Made Active in Reports: 10/06/2021
Number of Days to Update: 83
Source: CalEPA
Telephone: 916-323-2514
Last EDR Contact: 10/19/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Quarterly

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 05/18/2021
Date Data Arrived at EDR: 05/18/2021
Date Made Active in Reports: 08/03/2021
Number of Days to Update: 77
Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 08/17/2021
Next Scheduled EDR Contact: 12/06/2021
Data Release Frequency: Quarterly

PFAS: PFAS Contamination Site Location Listing

A listing of PFAS contaminated sites included in the GeoTracker database.

Date of Government Version: 06/04/2021
Date Data Arrived at EDR: 06/04/2021
Date Made Active in Reports: 08/27/2021
Number of Days to Update: 84
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/08/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Varies

AQUEOUS FOAM: Former Fire Training Facility Assessments Listing

Airports shown on this list are those believed to use Aqueous Film Forming Foam (AFFF), and certified by the Federal Aviation Administration (FAA) under Title 14, Code of Federal Regulations (CFR), Part 139 (14 CFR Part 139). This list was created by SWRCB using information available from the FAA. Location points shown are from the latitude and longitude listed on the FAA airport master record.

Date of Government Version: 12/01/2019
Date Data Arrived at EDR: 08/19/2021
Date Made Active in Reports: 10/28/2021
Number of Days to Update: 70
Source: State Water Resources Control Board
Telephone: 916-341-5455
Last EDR Contact: 08/19/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Varies

Local Lists of Registered Storage Tanks

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35
Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18
Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DRAFT

SAN FRANCISCO AST: Aboveground Storage Tank Site Listing
Aboveground storage tank sites

Date of Government Version: 08/05/2021
Date Data Arrived at EDR: 08/05/2021
Date Made Active in Reports: 10/29/2021
Number of Days to Update: 85

Source: San Francisco County Department of Public Health
Telephone: 415-252-3896
Last EDR Contact: 07/26/2021
Next Scheduled EDR Contact: 11/15/2021
Data Release Frequency: Varies

CERS TANKS: California Environmental Reporting System (CERS) Tanks
List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Aboveground Petroleum Storage and Underground Storage Tank regulatory programs.

Date of Government Version: 07/15/2021
Date Data Arrived at EDR: 07/15/2021
Date Made Active in Reports: 10/06/2021
Number of Days to Update: 83

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 10/19/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Quarterly

CA FID UST: Facility Inventory Database
The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Local Land Records

LIENS: Environmental Liens Listing
A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 05/27/2021
Date Data Arrived at EDR: 05/28/2021
Date Made Active in Reports: 08/20/2021
Number of Days to Update: 84

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/24/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information
A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 07/29/2021
Date Data Arrived at EDR: 08/04/2021
Date Made Active in Reports: 08/31/2021
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 10/01/2021
Next Scheduled EDR Contact: 01/10/2022
Data Release Frequency: Semi-Annually

DEED: Deed Restriction Listing

DRAFT

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 05/28/2021
Date Data Arrived at EDR: 05/28/2021
Date Made Active in Reports: 08/20/2021
Number of Days to Update: 84

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 08/31/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 09/12/2021
Date Data Arrived at EDR: 09/13/2021
Date Made Active in Reports: 09/28/2021
Number of Days to Update: 15

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 09/13/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Quarterly

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 06/30/2021
Date Data Arrived at EDR: 07/15/2021
Date Made Active in Reports: 10/06/2021
Number of Days to Update: 83

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 10/19/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Semi-Annually

LDS: Land Disposal Sites Listing (GEOTRACKER)

Land Disposal sites (Landfills) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing (GEOTRACKER)

Military sites (consisting of: Military UST sites; Military Privatized sites; and Military Cleanup sites [formerly known as DoD non UST]) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Quarterly

DRAFT

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 09/13/2021
Date Data Arrived at EDR: 09/15/2021
Date Made Active in Reports: 10/12/2021
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/15/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 08/10/2021
Date Data Arrived at EDR: 08/17/2021
Date Made Active in Reports: 10/22/2021
Number of Days to Update: 66

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 08/17/2021
Next Scheduled EDR Contact: 11/29/2021
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 10/15/2021
Next Scheduled EDR Contact: 01/24/2022
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/11/2018
Date Made Active in Reports: 11/06/2019
Number of Days to Update: 574

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 10/05/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

DRAFT

Date of Government Version: 01/01/2017
Date Data Arrived at EDR: 02/03/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 08/06/2021
Next Scheduled EDR Contact: 11/22/2021
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 09/13/2021
Date Data Arrived at EDR: 09/15/2021
Date Made Active in Reports: 09/28/2021
Number of Days to Update: 13

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 09/15/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 07/26/2021
Next Scheduled EDR Contact: 11/15/2021
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 05/08/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 08/06/2021
Next Scheduled EDR Contact: 11/15/2021
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 06/17/2020
Date Made Active in Reports: 09/10/2020
Number of Days to Update: 85

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 09/17/2021
Next Scheduled EDR Contact: 12/27/2021
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

DRAFT

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 08/14/2020
Date Made Active in Reports: 11/04/2020
Number of Days to Update: 82

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 08/17/2021
Next Scheduled EDR Contact: 11/29/2021
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 07/19/2021
Date Data Arrived at EDR: 07/19/2021
Date Made Active in Reports: 10/12/2021
Number of Days to Update: 85

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 10/20/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 07/29/2021
Date Data Arrived at EDR: 08/04/2021
Date Made Active in Reports: 08/31/2021
Number of Days to Update: 27

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 10/01/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 05/07/2021
Date Data Arrived at EDR: 05/13/2021
Date Made Active in Reports: 08/03/2021
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 10/18/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

DRAFT

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

Date of Government Version: 12/30/2020
Date Data Arrived at EDR: 01/14/2021
Date Made Active in Reports: 03/05/2021
Number of Days to Update: 50

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 10/01/2021
Next Scheduled EDR Contact: 11/15/2021
Data Release Frequency: Quarterly

PADS: PCB Activity Database System
PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 11/19/2020
Date Data Arrived at EDR: 01/08/2021
Date Made Active in Reports: 03/22/2021
Number of Days to Update: 73

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 10/08/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System
The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 09/30/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

MLTS: Material Licensing Tracking System
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 03/08/2021
Date Data Arrived at EDR: 03/11/2021
Date Made Active in Reports: 05/11/2021
Number of Days to Update: 61

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 10/18/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Quarterly

DRAFT

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 12/01/2020
Date Made Active in Reports: 02/09/2021
Number of Days to Update: 70
Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 09/03/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 01/12/2017
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 11/11/2019
Number of Days to Update: 251
Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 08/31/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 09/13/2019
Date Data Arrived at EDR: 11/06/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 96
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 08/06/2021
Next Scheduled EDR Contact: 11/15/2021
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 07/01/2019
Date Data Arrived at EDR: 07/01/2019
Date Made Active in Reports: 09/23/2019
Number of Days to Update: 84
Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 09/27/2021
Next Scheduled EDR Contact: 01/10/2022
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

DRAFT

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 01/02/2020
Date Data Arrived at EDR: 01/28/2020
Date Made Active in Reports: 04/17/2020
Number of Days to Update: 80

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 10/26/2021
Next Scheduled EDR Contact: 02/07/2022
Data Release Frequency: Quarterly

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 06/30/2021
Date Data Arrived at EDR: 07/14/2021
Date Made Active in Reports: 07/16/2021
Number of Days to Update: 2

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 09/30/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 06/22/2020
Date Made Active in Reports: 11/20/2020
Number of Days to Update: 151

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 09/15/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 10/05/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 07/26/2021
Date Data Arrived at EDR: 07/27/2021
Date Made Active in Reports: 10/22/2021
Number of Days to Update: 87

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 07/23/2021
Next Scheduled EDR Contact: 11/15/2021
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

DRAFT

Date of Government Version: 08/30/2019
Date Data Arrived at EDR: 11/15/2019
Date Made Active in Reports: 01/28/2020
Number of Days to Update: 74

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 08/12/2021
Next Scheduled EDR Contact: 11/29/2021
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites
A listing of former lead smelter site locations.

Date of Government Version: 07/29/2021
Date Data Arrived at EDR: 08/04/2021
Date Made Active in Reports: 08/31/2021
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 10/01/2021
Next Scheduled EDR Contact: 01/10/2022
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites
A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)
The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data
A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US MINES: Mines Master Index File
Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 05/03/2021
Date Data Arrived at EDR: 05/25/2021
Date Made Active in Reports: 08/11/2021
Number of Days to Update: 78

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 08/24/2021
Next Scheduled EDR Contact: 12/06/2021
Data Release Frequency: Semi-Annually

MINES VIOLATIONS: MSHA Violation Assessment Data
Mines violation and assessment information. Department of Labor, Mine Safety & Health Administration.

DRAFT

Date of Government Version: 06/30/2021
Date Data Arrived at EDR: 07/01/2021
Date Made Active in Reports: 09/28/2021
Number of Days to Update: 89

Source: DOL, Mine Safety & Health Admi
Telephone: 202-693-9424
Last EDR Contact: 09/09/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: Quarterly

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 05/06/2020
Date Data Arrived at EDR: 05/27/2020
Date Made Active in Reports: 08/13/2020
Number of Days to Update: 78

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 08/26/2021
Next Scheduled EDR Contact: 12/06/2021
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 08/26/2021
Next Scheduled EDR Contact: 12/06/2021
Data Release Frequency: Varies

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 06/15/2021
Date Data Arrived at EDR: 06/16/2021
Date Made Active in Reports: 08/17/2021
Number of Days to Update: 62

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 09/14/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 05/05/2021
Date Data Arrived at EDR: 05/18/2021
Date Made Active in Reports: 08/17/2021
Number of Days to Update: 91

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 08/31/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: Quarterly

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 06/26/2021
Date Data Arrived at EDR: 07/01/2021
Date Made Active in Reports: 09/28/2021
Number of Days to Update: 89

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 10/05/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Quarterly

DRAFT

DOCKET HWC: Hazardous Waste Compliance Docket Listing
A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 05/06/2021
Date Data Arrived at EDR: 05/21/2021
Date Made Active in Reports: 08/11/2021
Number of Days to Update: 82
Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 08/26/2021
Next Scheduled EDR Contact: 12/06/2021
Data Release Frequency: Varies

UXO: Unexploded Ordnance Sites
A listing of unexploded ordnance site locations

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 07/02/2020
Date Made Active in Reports: 09/17/2020
Number of Days to Update: 77
Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 10/07/2021
Next Scheduled EDR Contact: 01/24/2022
Data Release Frequency: Varies

FUELS PROGRAM: EPA Fuels Program Registered Listing
This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 08/13/2021
Date Data Arrived at EDR: 08/13/2021
Date Made Active in Reports: 10/22/2021
Number of Days to Update: 70
Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 08/13/2021
Next Scheduled EDR Contact: 11/29/2021
Data Release Frequency: Quarterly

CA BOND EXP. PLAN: Bond Expenditure Plan
Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6
Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CORTESE: "Cortese" Hazardous Waste & Substances Sites List
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 06/17/2021
Date Data Arrived at EDR: 06/17/2021
Date Made Active in Reports: 09/14/2021
Number of Days to Update: 89
Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 09/21/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Quarterly

CUPA LIVERMORE-PLEASANTON: CUPA Facility Listing
list of facilities associated with the various CUPA programs in Livermore-Pleasanton

Date of Government Version: 05/01/2019
Date Data Arrived at EDR: 05/14/2019
Date Made Active in Reports: 07/17/2019
Number of Days to Update: 64
Source: Livermore-Pleasanton Fire Department
Telephone: 925-454-2361
Last EDR Contact: 08/13/2021
Next Scheduled EDR Contact: 11/22/2021
Data Release Frequency: Varies

DRYCLEANERS: Cleaner Facilities
A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

DRAFT

Date of Government Version: 05/25/2021
Date Data Arrived at EDR: 05/28/2021
Date Made Active in Reports: 08/20/2021
Number of Days to Update: 84

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 08/24/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: Annually

DRYCLEAN AVAQMD: Antelope Valley Air Quality Management District Drycleaner Listing
A listing of dry cleaners in the Antelope Valley Air Quality Management District.

Date of Government Version: 05/25/2021
Date Data Arrived at EDR: 05/26/2021
Date Made Active in Reports: 08/18/2021
Number of Days to Update: 84

Source: Antelope Valley Air Quality Management District
Telephone: 661-723-8070
Last EDR Contact: 08/24/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: Varies

DRYCLEAN SOUTH COAST: South Coast Air Quality Management District Drycleaner Listing
A listing of dry cleaners in the South Coast Air Quality Management District

Date of Government Version: 05/18/2021
Date Data Arrived at EDR: 05/19/2021
Date Made Active in Reports: 08/05/2021
Number of Days to Update: 78

Source: South Coast Air Quality Management District
Telephone: 909-396-3211
Last EDR Contact: 08/17/2021
Next Scheduled EDR Contact: 12/06/2021
Data Release Frequency: Varies

EMI: Emissions Inventory Data
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 06/10/2021
Date Made Active in Reports: 08/27/2021
Number of Days to Update: 78

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 09/17/2021
Next Scheduled EDR Contact: 12/27/2021
Data Release Frequency: Varies

ENF: Enforcement Action Listing
A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 04/16/2021
Date Data Arrived at EDR: 04/20/2021
Date Made Active in Reports: 07/07/2021
Number of Days to Update: 78

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 10/13/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing
Financial Assurance information

Date of Government Version: 04/14/2021
Date Data Arrived at EDR: 04/15/2021
Date Made Active in Reports: 07/06/2021
Number of Days to Update: 82

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 10/05/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing
A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 05/13/2021
Date Data Arrived at EDR: 05/13/2021
Date Made Active in Reports: 07/26/2021
Number of Days to Update: 74

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 08/04/2021
Next Scheduled EDR Contact: 11/22/2021
Data Release Frequency: Varies

DRAFT

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 04/15/2020
Date Made Active in Reports: 07/02/2020
Number of Days to Update: 78

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 10/08/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Annually

ICE: ICE

Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 05/14/2021
Date Data Arrived at EDR: 05/14/2021
Date Made Active in Reports: 07/27/2021
Number of Days to Update: 74

Source: Department of Toxic Subsances Control
Telephone: 877-786-9427
Last EDR Contact: 08/13/2021
Next Scheduled EDR Contact: 11/29/2021
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List

The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HWP: EnviroStor Permitted Facilities Listing

Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 05/14/2021
Date Data Arrived at EDR: 05/14/2021
Date Made Active in Reports: 07/27/2021
Number of Days to Update: 74

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/13/2021
Next Scheduled EDR Contact: 11/29/2021
Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database

A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 07/01/2021
Date Data Arrived at EDR: 07/01/2021
Date Made Active in Reports: 09/24/2021
Number of Days to Update: 85

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 10/05/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Quarterly

MINES: Mines Site Location Listing

A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82

Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Quarterly

DRAFT

MWMP: Medical Waste Management Program Listing

The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 05/06/2021
Date Data Arrived at EDR: 05/28/2021
Date Made Active in Reports: 08/20/2021
Number of Days to Update: 84

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 08/31/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: Varies

NPDES: NPDES Permits Listing

A listing of NPDES permits, including stormwater.

Date of Government Version: 05/10/2021
Date Data Arrived at EDR: 05/11/2021
Date Made Active in Reports: 07/27/2021
Number of Days to Update: 77

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 08/13/2021
Next Scheduled EDR Contact: 11/22/2021
Data Release Frequency: Quarterly

PEST LIC: Pesticide Regulation Licenses Listing

A listing of licenses and certificates issued by the Department of Pesticide Regulation. The DPR issues licenses and/or certificates to: Persons and businesses that apply or sell pesticides; Pest control dealers and brokers; Persons who advise on agricultural pesticide applications.

Date of Government Version: 05/28/2021
Date Data Arrived at EDR: 05/28/2021
Date Made Active in Reports: 08/20/2021
Number of Days to Update: 84

Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 08/31/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: Quarterly

PROC: Certified Processors Database

A listing of certified processors.

Date of Government Version: 06/04/2021
Date Data Arrived at EDR: 06/04/2021
Date Made Active in Reports: 08/27/2021
Number of Days to Update: 84

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 09/08/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Quarterly

NOTIFY 65: Proposition 65 Records

Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 03/12/2021
Date Data Arrived at EDR: 03/16/2021
Date Made Active in Reports: 06/01/2021
Number of Days to Update: 77

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 08/26/2021
Next Scheduled EDR Contact: 12/27/2021
Data Release Frequency: No Update Planned

UIC: UIC Listing

A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/25/2021
Number of Days to Update: 83

Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Varies

DRAFT

UIC GEO: Underground Injection Control Sites (GEOTRACKER)
Underground control injection sites

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82
Source: State Water Resource Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Varies

WASTEWATER PITS: Oil Wastewater Pits Listing
Water officials discovered that oil producers have been dumping chemical-laden wastewater into hundreds of unlined pits that are operating without proper permits. Inspections completed by the Central Valley Regional Water Quality Control Board revealed the existence of previously unidentified waste sites. The water boards review found that more than one-third of the region's active disposal pits are operating without permission.

Date of Government Version: 02/11/2021
Date Data Arrived at EDR: 07/01/2021
Date Made Active in Reports: 09/29/2021
Number of Days to Update: 90
Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 10/08/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Varies

WDS: Waste Discharge System
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9
Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 08/10/2021
Next Scheduled EDR Contact: 11/29/2021
Data Release Frequency: No Update Planned

WIP: Well Investigation Program Case List
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13
Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 09/14/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: No Update Planned

MILITARY PRIV SITES: Military Privatized Sites (GEOTRACKER)
Military privatized sites

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Varies

PROJECT: Project Sites (GEOTRACKER)
Projects sites

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Varies

WDR: Waste Discharge Requirements Listing
In general, the Waste Discharge Requirements (WDRs) Program (sometimes also referred to as the "Non Chapter 15 (Non 15) Program") regulates point discharges that are exempt pursuant to Subsection 20090 of Title 27 and not subject to the Federal Water Pollution Control Act. Exemptions from Title 27 may be granted for nine categories of discharges (e.g., sewage, wastewater, etc.) that meet, and continue to meet, the preconditions listed for each specific exemption. The scope of the WDRs Program also includes the discharge of wastes classified as inert, pursuant to section 20230 of Title 27.

DRAFT

Date of Government Version: 06/07/2021
Date Data Arrived at EDR: 06/07/2021
Date Made Active in Reports: 08/27/2021
Number of Days to Update: 81
Source: State Water Resources Control Board
Telephone: 916-341-5810
Last EDR Contact: 09/08/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Quarterly

CIWQS: California Integrated Water Quality System

The California Integrated Water Quality System (CIWQS) is a computer system used by the State and Regional Water Quality Control Boards to track information about places of environmental interest, manage permits and other orders, track inspections, and manage violations and enforcement activities.

Date of Government Version: 05/19/2021
Date Data Arrived at EDR: 05/19/2021
Date Made Active in Reports: 08/12/2021
Number of Days to Update: 85
Source: State Water Resources Control Board
Telephone: 866-794-4977
Last EDR Contact: 08/31/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: Varies

CERS: CalEPA Regulated Site Portal Data

The CalEPA Regulated Site Portal database combines data about environmentally regulated sites and facilities in California into a single database. It combines data from a variety of state and federal databases, and provides an overview of regulated activities across the spectrum of environmental programs for any given location in California. These activities include hazardous materials and waste, state and federal cleanups, impacted ground and surface waters, and toxic materials

Date of Government Version: 07/15/2021
Date Data Arrived at EDR: 07/15/2021
Date Made Active in Reports: 10/06/2021
Number of Days to Update: 83
Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 10/19/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

NON-CASE INFO: Non-Case Information Sites (GEOTRACKER)

Non-Case Information sites

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Varies

OTHER OIL GAS: Other Oil & Gas Projects Sites (GEOTRACKER)

Other Oil & Gas Projects sites

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Varies

PROD WATER PONDS: Produced Water Ponds Sites (GEOTRACKER)

Produced water ponds sites

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Varies

SAMPLING POINT: Sampling Point ? Public Sites (GEOTRACKER)

Sampling point - public sites

DRAFT

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Varies

WELL STIM PROJ: Well Stimulation Project (GEOTRACKER)

Includes areas of groundwater monitoring plans, a depiction of the monitoring network, and the facilities, boundaries, and subsurface characteristics of the oilfield and the features (oil and gas wells, produced water ponds, UIC wells, water supply wells, etc?) being monitored

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/25/2021
Number of Days to Update: 83

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Varies

HWTS: Hazardous Waste Tracking System

DTSC maintains the Hazardous Waste Tracking System that stores ID number information since the early 1980s and manifest data since 1993. The system collects both manifest copies from the generator and destination facility.

Date of Government Version: 07/13/2021
Date Data Arrived at EDR: 07/14/2021
Date Made Active in Reports: 10/06/2021
Number of Days to Update: 84

Source: Department of Toxic Substances Control
Telephone: 916-324-2444
Last EDR Contact: 09/30/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Varies

PCS: Permit Compliance System

PCS is a computerized management information system that contains data on National Pollutant Discharge Elimination System (NPDES) permit holding facilities. PCS tracks the permit, compliance, and enforcement status of NPDES facilities.

Date of Government Version: 07/14/2011
Date Data Arrived at EDR: 08/05/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 55

Source: EPA, Office of Water
Telephone: 202-564-2496
Last EDR Contact: 09/30/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Semi-Annually

PCS INACTIVE: Listing of Inactive PCS Permits

An inactive permit is a facility that has shut down or is no longer discharging.

Date of Government Version: 11/05/2014
Date Data Arrived at EDR: 01/06/2015
Date Made Active in Reports: 05/06/2015
Number of Days to Update: 120

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/30/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Semi-Annually

MINES MRDS: Mineral Resources Data System

Mineral Resources Data System

Date of Government Version: 04/06/2018
Date Data Arrived at EDR: 10/21/2019
Date Made Active in Reports: 10/24/2019
Number of Days to Update: 3

Source: USGS
Telephone: 703-648-6533
Last EDR Contact: 08/26/2021
Next Scheduled EDR Contact: 12/06/2021
Data Release Frequency: Varies

PCS ENF: Enforcement data

No description is available for this data

DRAFT

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 02/05/2015
Date Made Active in Reports: 03/06/2015
Number of Days to Update: 29

Source: EPA
Telephone: 202-564-2497
Last EDR Contact: 09/30/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Varies

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

DRAFT

RGA LF: Recovered Government Archive Solid Waste Facilities List
The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196
Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank
The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182
Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ALAMEDA COUNTY:

CS ALAMEDA: Contaminated Sites
A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 01/09/2019
Date Data Arrived at EDR: 01/11/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 53
Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 09/30/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Semi-Annually

UST ALAMEDA: Underground Tanks
Underground storage tank sites located in Alameda county.

Date of Government Version: 06/29/2021
Date Data Arrived at EDR: 06/30/2021
Date Made Active in Reports: 09/22/2021
Number of Days to Update: 84
Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 09/30/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA AMADOR: CUPA Facility List
Cupa Facility List

Date of Government Version: 08/05/2021
Date Data Arrived at EDR: 08/06/2021
Date Made Active in Reports: 09/17/2021
Number of Days to Update: 42
Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 10/29/2021
Next Scheduled EDR Contact: 02/14/2022
Data Release Frequency: Varies

BUTTE COUNTY:

DRAFT

CUPA BUTTE: CUPA Facility Listing
Cupa facility list.

Date of Government Version: 04/21/2017
Date Data Arrived at EDR: 04/25/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 106

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 09/30/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA CALVERAS: CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 06/15/2021
Date Data Arrived at EDR: 06/16/2021
Date Made Active in Reports: 07/02/2021
Number of Days to Update: 16

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 09/14/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA COLUSA: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/06/2020
Date Data Arrived at EDR: 04/23/2020
Date Made Active in Reports: 07/10/2020
Number of Days to Update: 78

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 10/29/2021
Next Scheduled EDR Contact: 02/14/2022
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

SL CONTRA COSTA: Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 07/20/2021
Date Data Arrived at EDR: 07/20/2021
Date Made Active in Reports: 10/11/2021
Number of Days to Update: 83

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 10/22/2021
Next Scheduled EDR Contact: 02/07/2022
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA DEL NORTE: CUPA Facility List
Cupa Facility list

Date of Government Version: 06/29/2021
Date Data Arrived at EDR: 07/23/2021
Date Made Active in Reports: 10/08/2021
Number of Days to Update: 77

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 10/29/2021
Next Scheduled EDR Contact: 02/07/2022
Data Release Frequency: Varies

EL DORADO COUNTY:

DRAFT

CUPA EL DORADO: CUPA Facility List
CUPA facility list.

Date of Government Version: 07/30/2021
Date Data Arrived at EDR: 08/03/2021
Date Made Active in Reports: 10/26/2021
Number of Days to Update: 84

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 10/22/2021
Next Scheduled EDR Contact: 02/07/2022
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA FRESNO: CUPA Resources List
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 04/09/2021
Date Data Arrived at EDR: 06/23/2021
Date Made Active in Reports: 09/17/2021
Number of Days to Update: 86

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 10/01/2021
Next Scheduled EDR Contact: 01/10/2022
Data Release Frequency: Semi-Annually

GLENN COUNTY:

CUPA GLENN: CUPA Facility List
Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 49

Source: Glenn County Air Pollution Control District
Telephone: 830-934-6500
Last EDR Contact: 07/13/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: No Update Planned

HUMBOLDT COUNTY:

CUPA HUMBOLDT: CUPA Facility List
CUPA facility list.

Date of Government Version: 05/17/2021
Date Data Arrived at EDR: 05/18/2021
Date Made Active in Reports: 05/20/2021
Number of Days to Update: 2

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 08/10/2021
Next Scheduled EDR Contact: 11/29/2021
Data Release Frequency: Semi-Annually

IMPERIAL COUNTY:

CUPA IMPERIAL: CUPA Facility List
Cupa facility list.

Date of Government Version: 07/13/2021
Date Data Arrived at EDR: 07/15/2021
Date Made Active in Reports: 10/06/2021
Number of Days to Update: 83

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 10/15/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

INYO COUNTY:

DRAFT

CUPA INYO: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/03/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 72

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 08/10/2021
Next Scheduled EDR Contact: 11/29/2021
Data Release Frequency: Varies

KERN COUNTY:

CUPA KERN: CUPA Facility List
A listing of sites included in the Kern County Hazardous Material Business Plan.

Date of Government Version: 07/06/2021
Date Data Arrived at EDR: 08/12/2021
Date Made Active in Reports: 10/07/2021
Number of Days to Update: 56

Source: Kern County Public Health
Telephone: 661-321-3000
Last EDR Contact: 10/29/2021
Next Scheduled EDR Contact: 02/14/2022
Data Release Frequency: Varies

UST KERN: Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 07/06/2021
Date Data Arrived at EDR: 08/12/2021
Date Made Active in Reports: 08/18/2021
Number of Days to Update: 6

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 10/29/2021
Next Scheduled EDR Contact: 02/14/2022
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA KINGS: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 12/03/2020
Date Data Arrived at EDR: 01/26/2021
Date Made Active in Reports: 04/14/2021
Number of Days to Update: 78

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 11/29/2021
Data Release Frequency: Varies

LAKE COUNTY:

CUPA LAKE: CUPA Facility List
Cupa facility list

Date of Government Version: 07/27/2021
Date Data Arrived at EDR: 07/28/2021
Date Made Active in Reports: 10/21/2021
Number of Days to Update: 85

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 10/06/2021
Next Scheduled EDR Contact: 01/24/2022
Data Release Frequency: Varies

LASSEN COUNTY:

DRAFT

CUPA LASSEN: CUPA Facility List
Cupa facility list

Date of Government Version: 07/31/2020
Date Data Arrived at EDR: 08/21/2020
Date Made Active in Reports: 11/09/2020
Number of Days to Update: 80

Source: Lassen County Environmental Health
Telephone: 530-251-8528
Last EDR Contact: 10/15/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

LOS ANGELES COUNTY:

AOCONCERN: Key Areas of Concerns in Los Angeles County
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office. Date of Government Version: 3/30/2009 Exide Site area is a cleanup plan of lead-impacted soil surrounding the former Exide Facility as designated by the DTSC. Date of Government Version: 7/17/2017

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: N/A
Telephone: N/A
Last EDR Contact: 09/09/2021
Next Scheduled EDR Contact: 12/27/2021
Data Release Frequency: No Update Planned

HMS LOS ANGELES: HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 07/08/2021
Date Data Arrived at EDR: 07/09/2021
Date Made Active in Reports: 09/29/2021
Number of Days to Update: 82

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 10/15/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Semi-Annually

LF LOS ANGELES: List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 07/09/2021
Date Data Arrived at EDR: 07/09/2021
Date Made Active in Reports: 09/29/2021
Number of Days to Update: 82

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 10/08/2021
Next Scheduled EDR Contact: 01/24/2022
Data Release Frequency: Varies

LF LOS ANGELES CITY: City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2021
Date Data Arrived at EDR: 02/18/2021
Date Made Active in Reports: 05/10/2021
Number of Days to Update: 81

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 10/05/2021
Next Scheduled EDR Contact: 01/24/2022
Data Release Frequency: Varies

LOS ANGELES AST: Active & Inactive AST Inventory
A listing of active & inactive above ground petroleum storage tank site locations, located in the City of Los Angeles.

Date of Government Version: 06/01/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 58

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 09/24/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Varies

DRAFT

LOS ANGELES CO LF METHANE: Methane Producing Landfills

This data was created on April 30, 2012 to represent known disposal sites in Los Angeles County that may produce and emanate methane gas. The shapefile contains disposal sites within Los Angeles County that once accepted degradable refuse material. Information used to create this data was extracted from a landfill survey performed by County Engineers (Major Waste System Map, 1973) as well as historical records from CalRecycle, Regional Water Quality Control Board, and Los Angeles County Department of Public Health

Date of Government Version: 02/04/2021
Date Data Arrived at EDR: 04/16/2021
Date Made Active in Reports: 04/21/2021
Number of Days to Update: 5

Source: Los Angeles County Department of Public Works
Telephone: 626-458-6973
Last EDR Contact: 10/08/2021
Next Scheduled EDR Contact: 01/24/2022
Data Release Frequency: No Update Planned

LOS ANGELES HM: Active & Inactive Hazardous Materials Inventory

A listing of active & inactive hazardous materials facility locations, located in the City of Los Angeles.

Date of Government Version: 04/19/2021
Date Data Arrived at EDR: 06/17/2021
Date Made Active in Reports: 06/28/2021
Number of Days to Update: 11

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 09/24/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Varies

LOS ANGELES UST: Active & Inactive UST Inventory

A listing of active & inactive underground storage tank site locations and underground storage tank historical sites, located in the City of Los Angeles.

Date of Government Version: 04/19/2021
Date Data Arrived at EDR: 06/17/2021
Date Made Active in Reports: 09/14/2021
Number of Days to Update: 89

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 09/24/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Varies

SITE MIT LOS ANGELES: Site Mitigation List

Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 05/26/2021
Date Data Arrived at EDR: 07/09/2021
Date Made Active in Reports: 09/29/2021
Number of Days to Update: 82

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 10/15/2021
Next Scheduled EDR Contact: 01/24/2022
Data Release Frequency: Annually

UST EL SEGUNDO: City of El Segundo Underground Storage Tank

Underground storage tank sites located in El Segundo city.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 04/19/2017
Date Made Active in Reports: 05/10/2017
Number of Days to Update: 21

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 10/06/2021
Next Scheduled EDR Contact: 01/24/2022
Data Release Frequency: No Update Planned

UST LONG BEACH: City of Long Beach Underground Storage Tank

Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 04/22/2019
Date Data Arrived at EDR: 04/23/2019
Date Made Active in Reports: 06/27/2019
Number of Days to Update: 65

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 10/14/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

DRAFT

UST TORRANCE: City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 02/02/2021
Date Data Arrived at EDR: 04/28/2021
Date Made Active in Reports: 07/13/2021
Number of Days to Update: 76

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 10/15/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA MADERA: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 08/10/2020
Date Data Arrived at EDR: 08/12/2020
Date Made Active in Reports: 10/23/2020
Number of Days to Update: 72

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 08/10/2021
Next Scheduled EDR Contact: 11/29/2021
Data Release Frequency: Varies

MARIN COUNTY:

UST MARIN: Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 09/26/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/02/2018
Number of Days to Update: 29

Source: Public Works Department Waste Management
Telephone: 415-473-6647
Last EDR Contact: 09/23/2021
Next Scheduled EDR Contact: 01/10/2022
Data Release Frequency: Semi-Annually

MENDOCINO COUNTY:

UST MENDOCINO: Mendocino County UST Database
A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 03/24/2021
Date Data Arrived at EDR: 04/07/2021
Date Made Active in Reports: 06/24/2021
Number of Days to Update: 78

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 08/17/2021
Next Scheduled EDR Contact: 12/06/2021
Data Release Frequency: Annually

MERCED COUNTY:

CUPA MERCED: CUPA Facility List
CUPA facility list.

Date of Government Version: 05/13/2021
Date Data Arrived at EDR: 05/14/2021
Date Made Active in Reports: 07/26/2021
Number of Days to Update: 73

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 08/09/2021
Next Scheduled EDR Contact: 11/28/2021
Data Release Frequency: Varies

MONO COUNTY:

DRAFT

CUPA MONO: CUPA Facility List
CUPA Facility List

Date of Government Version: 02/22/2021
Date Data Arrived at EDR: 03/02/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 78

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 08/31/2021
Next Scheduled EDR Contact: 12/06/3021
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA MONTEREY: CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 06/23/2021
Date Data Arrived at EDR: 06/23/2021
Date Made Active in Reports: 06/24/2021
Number of Days to Update: 1

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 09/23/2021
Next Scheduled EDR Contact: 01/10/2022
Data Release Frequency: Varies

NAPA COUNTY:

LUST NAPA: Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 01/09/2017
Date Data Arrived at EDR: 01/11/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 50

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 08/17/2021
Next Scheduled EDR Contact: 12/06/2021
Data Release Frequency: No Update Planned

UST NAPA: Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 09/05/2019
Date Data Arrived at EDR: 09/09/2019
Date Made Active in Reports: 10/31/2019
Number of Days to Update: 52

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 08/17/2021
Next Scheduled EDR Contact: 12/06/2021
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA NEVADA: CUPA Facility List
CUPA facility list.

Date of Government Version: 07/28/2021
Date Data Arrived at EDR: 07/28/2021
Date Made Active in Reports: 10/21/2021
Number of Days to Update: 85

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 10/22/2021
Next Scheduled EDR Contact: 02/07/2022
Data Release Frequency: Varies

ORANGE COUNTY:

IND_SITE ORANGE: List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

DRAFT

Date of Government Version: 07/09/2021
Date Data Arrived at EDR: 08/03/2021
Date Made Active in Reports: 10/26/2021
Number of Days to Update: 84

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 10/29/2021
Next Scheduled EDR Contact: 02/14/2022
Data Release Frequency: Annually

LUST ORANGE: List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 07/09/2021
Date Data Arrived at EDR: 08/03/2021
Date Made Active in Reports: 10/26/2021
Number of Days to Update: 84

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 10/29/2021
Next Scheduled EDR Contact: 02/14/2022
Data Release Frequency: Quarterly

UST ORANGE: List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 07/09/2021
Date Data Arrived at EDR: 07/29/2021
Date Made Active in Reports: 10/19/2021
Number of Days to Update: 82

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 10/29/2021
Next Scheduled EDR Contact: 02/14/2022
Data Release Frequency: Quarterly

PLACER COUNTY:

MS PLACER: Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 05/25/2021
Date Data Arrived at EDR: 05/26/2021
Date Made Active in Reports: 06/01/2021
Number of Days to Update: 6

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 08/24/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: Semi-Annually

PLUMAS COUNTY:

CUPA PLUMAS: CUPA Facility List
Plumas County CUPA Program facilities.

Date of Government Version: 03/31/2019
Date Data Arrived at EDR: 04/23/2019
Date Made Active in Reports: 06/26/2019
Number of Days to Update: 64

Source: Plumas County Environmental Health
Telephone: 530-283-6355
Last EDR Contact: 10/14/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

RIVERSIDE COUNTY:

LUST RIVERSIDE: Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 06/29/2021
Date Data Arrived at EDR: 06/30/2021
Date Made Active in Reports: 07/14/2021
Number of Days to Update: 14

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 09/09/2021
Next Scheduled EDR Contact: 12/27/2021
Data Release Frequency: Quarterly

DRAFT

UST RIVERSIDE: Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 06/29/2021
Date Data Arrived at EDR: 06/30/2021
Date Made Active in Reports: 07/14/2021
Number of Days to Update: 14

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 09/09/2021
Next Scheduled EDR Contact: 12/27/2021
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

CS SACRAMENTO: Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 03/30/2021
Date Data Arrived at EDR: 04/01/2021
Date Made Active in Reports: 06/23/2021
Number of Days to Update: 83

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 09/28/2021
Next Scheduled EDR Contact: 01/10/2022
Data Release Frequency: Quarterly

ML SACRAMENTO: Master Hazardous Materials Facility List
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 03/30/2021
Date Data Arrived at EDR: 04/01/2021
Date Made Active in Reports: 06/25/2021
Number of Days to Update: 85

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 10/01/2021
Next Scheduled EDR Contact: 01/10/2022
Data Release Frequency: Quarterly

SAN BENITO COUNTY:

CUPA SAN BENITO: CUPA Facility List
Cupa facility list

Date of Government Version: 07/27/2021
Date Data Arrived at EDR: 07/28/2021
Date Made Active in Reports: 10/21/2021
Number of Days to Update: 85

Source: San Benito County Environmental Health
Telephone: N/A
Last EDR Contact: 10/29/2021
Next Scheduled EDR Contact: 02/14/2022
Data Release Frequency: Varies

SAN BERNARDINO COUNTY:

PERMITS SAN BERNARDINO: Hazardous Material Permits
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 05/19/2021
Date Data Arrived at EDR: 05/19/2021
Date Made Active in Reports: 06/07/2021
Number of Days to Update: 19

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 07/27/2021
Next Scheduled EDR Contact: 11/15/2021
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

DRAFT

HMMD SAN DIEGO: Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 05/28/2021
Date Data Arrived at EDR: 05/28/2021
Date Made Active in Reports: 08/20/2021
Number of Days to Update: 84

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 08/31/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: Quarterly

LF SAN DIEGO: Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 10/01/2020
Date Data Arrived at EDR: 11/23/2020
Date Made Active in Reports: 02/08/2021
Number of Days to Update: 77

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 10/29/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

SAN DIEGO CO LOP: Local Oversight Program Listing

A listing of all LOP release sites that are or were under the County of San Diego's jurisdiction. Included are closed or transferred cases, open cases, and cases that did not have a case type indicated. The cases without a case type are mostly complaints; however, some of them could be LOP cases.

Date of Government Version: 07/14/2020
Date Data Arrived at EDR: 07/16/2020
Date Made Active in Reports: 09/29/2020
Number of Days to Update: 75

Source: Department of Environmental Health
Telephone: 858-505-6874
Last EDR Contact: 10/15/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

SAN DIEGO CO SAM: Environmental Case Listing

The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 08/24/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

CUPA SAN FRANCISCO CO: CUPA Facility Listing

Cupa facilities

Date of Government Version: 08/05/2021
Date Data Arrived at EDR: 08/05/2021
Date Made Active in Reports: 10/29/2021
Number of Days to Update: 85

Source: San Francisco County Department of Environmental Health
Telephone: 415-252-3896
Last EDR Contact: 10/29/2021
Next Scheduled EDR Contact: 02/14/2022
Data Release Frequency: Varies

LUST SAN FRANCISCO: Local Oversite Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

DRAFT

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 07/27/2021
Next Scheduled EDR Contact: 11/15/2021
Data Release Frequency: No Update Planned

UST SAN FRANCISCO: Underground Storage Tank Information
Underground storage tank sites located in San Francisco county.

Date of Government Version: 08/05/2021
Date Data Arrived at EDR: 08/05/2021
Date Made Active in Reports: 10/29/2021
Number of Days to Update: 85

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 07/27/2021
Next Scheduled EDR Contact: 11/15/2021
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

UST SAN JOAQUIN: San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 06/22/2018
Date Data Arrived at EDR: 06/26/2018
Date Made Active in Reports: 07/11/2018
Number of Days to Update: 15

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 09/09/2021
Next Scheduled EDR Contact: 12/27/2021
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA SAN LUIS OBISPO: CUPA Facility List
Cupa Facility List.

Date of Government Version: 05/07/2021
Date Data Arrived at EDR: 05/11/2021
Date Made Active in Reports: 05/14/2021
Number of Days to Update: 3

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 08/10/2021
Next Scheduled EDR Contact: 11/29/2021
Data Release Frequency: Varies

SAN MATEO COUNTY:

BI SAN MATEO: Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 02/20/2020
Date Data Arrived at EDR: 02/20/2020
Date Made Active in Reports: 04/24/2020
Number of Days to Update: 64

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 09/10/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Annually

LUST SAN MATEO: Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 03/29/2019
Date Data Arrived at EDR: 03/29/2019
Date Made Active in Reports: 05/29/2019
Number of Days to Update: 61

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 08/31/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

DRAFT

CUPA SANTA BARBARA: CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 08/10/2021
Next Scheduled EDR Contact: 11/29/2021
Data Release Frequency: No Update Planned

SANTA CLARA COUNTY:

CUPA SANTA CLARA: Cupa Facility List
Cupa facility list

Date of Government Version: 08/04/2021
Date Data Arrived at EDR: 08/05/2021
Date Made Active in Reports: 10/29/2021
Number of Days to Update: 85

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 08/04/2021
Next Scheduled EDR Contact: 11/29/2021
Data Release Frequency: Varies

HIST LUST SANTA CLARA: HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LUST SANTA CLARA: LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 08/17/2021
Next Scheduled EDR Contact: 12/06/2021
Data Release Frequency: No Update Planned

SAN JOSE HAZMAT: Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 11/03/2020
Date Data Arrived at EDR: 11/05/2020
Date Made Active in Reports: 01/26/2021
Number of Days to Update: 82

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 07/27/2021
Next Scheduled EDR Contact: 11/15/2021
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA SANTA CRUZ: CUPA Facility List
CUPA facility listing.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 90

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 08/10/2021
Next Scheduled EDR Contact: 11/29/2021
Data Release Frequency: Varies

SHASTA COUNTY:

DRAFT

CUPA SHASTA: CUPA Facility List
Cupa Facility List.

Date of Government Version: 06/15/2017
Date Data Arrived at EDR: 06/19/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 51

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 08/10/2021
Next Scheduled EDR Contact: 11/29/2021
Data Release Frequency: Varies

SOLANO COUNTY:

LUST SOLANO: Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 06/04/2019
Date Data Arrived at EDR: 06/06/2019
Date Made Active in Reports: 08/13/2019
Number of Days to Update: 68

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 08/24/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: Quarterly

UST SOLANO: Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 06/22/2021
Date Data Arrived at EDR: 06/23/2021
Date Made Active in Reports: 09/17/2021
Number of Days to Update: 86

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 09/09/2021
Next Scheduled EDR Contact: 12/12/2021
Data Release Frequency: Quarterly

SONOMA COUNTY:

CUPA SONOMA: Cupa Facility List
Cupa Facility list

Date of Government Version: 07/02/2021
Date Data Arrived at EDR: 07/06/2021
Date Made Active in Reports: 07/14/2021
Number of Days to Update: 8

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 09/14/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Varies

LUST SONOMA: Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 06/30/2021
Date Data Arrived at EDR: 06/30/2021
Date Made Active in Reports: 09/24/2021
Number of Days to Update: 86

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 09/14/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Quarterly

STANISLAUS COUNTY:

CUPA STANISLAUS: CUPA Facility List
Cupa facility list

Date of Government Version: 05/14/2021
Date Data Arrived at EDR: 05/17/2021
Date Made Active in Reports: 08/03/2021
Number of Days to Update: 78

Source: Stanislaus County Department of Ennvironmental Protection
Telephone: 209-525-6751
Last EDR Contact: 10/06/2021
Next Scheduled EDR Contact: 01/24/2022
Data Release Frequency: Varies

SUTTER COUNTY:

DRAFT

UST SUTTER: Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 05/25/2021
Date Data Arrived at EDR: 05/26/2021
Date Made Active in Reports: 08/18/2021
Number of Days to Update: 84

Source: Sutter County Environmental Health Services
Telephone: 530-822-7500
Last EDR Contact: 08/24/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: Semi-Annually

TEHAMA COUNTY:

CUPA TEHAMA: CUPA Facility List
Cupa facilities

Date of Government Version: 01/13/2021
Date Data Arrived at EDR: 01/14/2021
Date Made Active in Reports: 04/06/2021
Number of Days to Update: 82

Source: Tehama County Department of Environmental Health
Telephone: 530-527-8020
Last EDR Contact: 08/24/2021
Next Scheduled EDR Contact: 11/15/2021
Data Release Frequency: Varies

TRINITY COUNTY:

CUPA TRINITY: CUPA Facility List
Cupa facility list

Date of Government Version: 07/14/2021
Date Data Arrived at EDR: 07/15/2021
Date Made Active in Reports: 10/06/2021
Number of Days to Update: 83

Source: Department of Toxic Substances Control
Telephone: 760-352-0381
Last EDR Contact: 10/15/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

TULARE COUNTY:

CUPA TULARE: CUPA Facility List
Cupa program facilities

Date of Government Version: 04/26/2021
Date Data Arrived at EDR: 04/28/2021
Date Made Active in Reports: 07/13/2021
Number of Days to Update: 76

Source: Tulare County Environmental Health Services Division
Telephone: 559-624-7400
Last EDR Contact: 08/24/2021
Next Scheduled EDR Contact: 11/15/2021
Data Release Frequency: Varies

TUOLUMNE COUNTY:

CUPA TUOLUMNE: CUPA Facility List
Cupa facility list

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/25/2018
Date Made Active in Reports: 06/25/2018
Number of Days to Update: 61

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 10/14/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

VENTURA COUNTY:

DRAFT

BWT VENTURA: Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 05/26/2021
Date Data Arrived at EDR: 07/19/2021
Date Made Active in Reports: 10/08/2021
Number of Days to Update: 81
Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 10/18/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Quarterly

LF VENTURA: Inventory of Illegal Abandoned and Inactive Sites
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49
Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 09/23/2021
Next Scheduled EDR Contact: 01/10/2022
Data Release Frequency: No Update Planned

LUST VENTURA: Listing of Underground Tank Cleanup Sites
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37
Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 08/04/2021
Next Scheduled EDR Contact: 11/22/2021
Data Release Frequency: No Update Planned

MED WASTE VENTURA: Medical Waste Program List
To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 05/26/2021
Date Data Arrived at EDR: 07/19/2021
Date Made Active in Reports: 10/07/2021
Number of Days to Update: 80
Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 10/18/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Quarterly

UST VENTURA: Underground Tank Closed Sites List
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 05/26/2021
Date Data Arrived at EDR: 06/04/2021
Date Made Active in Reports: 08/27/2021
Number of Days to Update: 84
Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 09/08/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Quarterly

YOLO COUNTY:

UST YOLO: Underground Storage Tank Comprehensive Facility Report
Underground storage tank sites located in Yolo county.

Date of Government Version: 06/22/2021
Date Data Arrived at EDR: 06/28/2021
Date Made Active in Reports: 09/21/2021
Number of Days to Update: 85
Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 09/23/2021
Next Scheduled EDR Contact: 01/10/2022
Data Release Frequency: Annually

YUBA COUNTY:

DRAFT

CUPA YUBA: CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 07/20/2021
Date Data Arrived at EDR: 07/20/2021
Date Made Active in Reports: 10/08/2021
Number of Days to Update: 80

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 10/22/2021
Next Scheduled EDR Contact: 02/07/2022
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 03/24/2021
Date Data Arrived at EDR: 05/11/2021
Date Made Active in Reports: 07/28/2021
Number of Days to Update: 78

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 08/10/2021
Next Scheduled EDR Contact: 11/22/2021
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 04/10/2019
Date Made Active in Reports: 05/16/2019
Number of Days to Update: 36

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 10/05/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 01/01/2019
Date Data Arrived at EDR: 04/29/2020
Date Made Active in Reports: 07/10/2020
Number of Days to Update: 72

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 10/29/2021
Next Scheduled EDR Contact: 02/07/2022
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 06/30/2018
Date Data Arrived at EDR: 07/19/2019
Date Made Active in Reports: 09/10/2019
Number of Days to Update: 53

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 10/07/2021
Next Scheduled EDR Contact: 01/24/2022
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 02/11/2021
Date Made Active in Reports: 02/24/2021
Number of Days to Update: 13

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 08/11/2021
Next Scheduled EDR Contact: 11/29/2021
Data Release Frequency: Annually

DRAFT

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 06/19/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 76

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 09/01/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: Endeavor Business Media
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by Endeavor Business Media. This information is provided on a best effort basis and Endeavor Business Media does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of Endeavor Business Media.

Electric Power Transmission Line Data
Source: Endeavor Business Media
This map includes information copyrighted by Endeavor Business Media. This information is provided on a best effort basis and Endeavor Business Media does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of Endeavor Business Media.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

DRAFT

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

© 2015 TomTom North America, Inc. All rights reserved. This material is proprietary and the subject of copyright protection and other intellectual property rights owned by or licensed to Tele Atlas North America, Inc. The use of this material is subject to the terms of a license agreement. You will be held liable for any unauthorized copying or disclosure of this material.

DRAFT

GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

CALIFORNIA 118
CALIFORNIA 118
MOORPARK, CA 93021

TARGET PROPERTY COORDINATES

Latitude (North):	34.279935 - 34° 16' 47.77''
Longitude (West):	118.912395 - 118° 54' 44.62''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	323959.8
UTM Y (Meters):	3794655.0
Elevation:	452 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5630753 MOORPARK, CA
Version Date:	2012

DRAFT

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

TOPOGRAPHIC INFORMATION

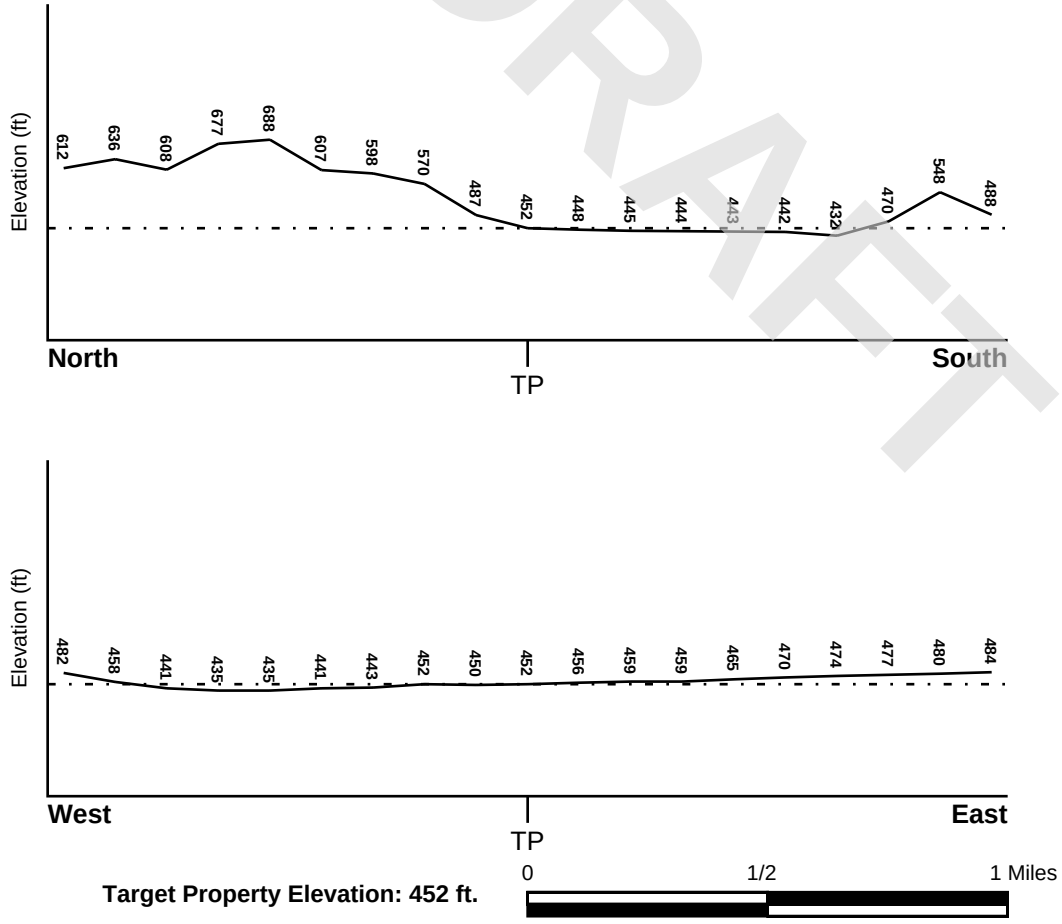
Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General South

DRAFT

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
06111C0818E	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
06111C0816E	FEMA FIRM Flood data
06111C0817E	FEMA FIRM Flood data
06111C0819E	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
MOORPARK	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

DRAFT

* ©1996 Site−specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

Era:	Cenozoic
System:	Tertiary
Series:	Pliocene
Code:	Tp *(decoded above as Era, System & Series)*

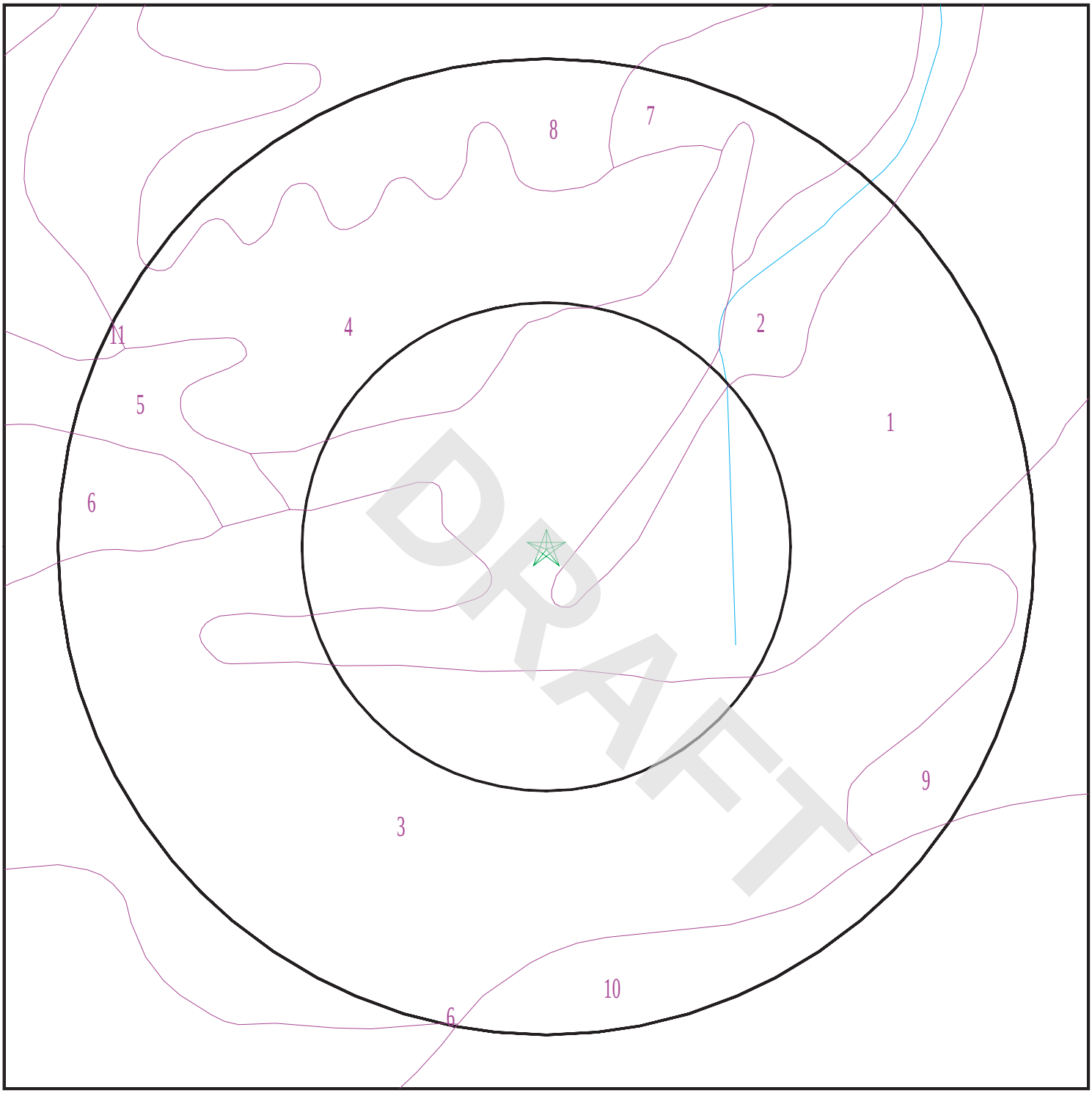
GEOLOGIC AGE IDENTIFICATION

Category: Stratified Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

DRAFT

SSURGO SOIL MAP - 6729552.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	California 118	CLIENT:	BBG Assessment Inc.
ADDRESS:	California 118 Moorpark CA 93021	CONTACT:	Haley Zeigler
		INQUIRY #:	6729552.2s
LAT/LONG:	34.279935 / 118.912395	DATE:	November 01, 2021 2:22 pm

Copyright © 2021 EDR, Inc. © 2015 TomTom Rel. 2015.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: METZ

Soil Surface Texture: loamy sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Somewhat excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

DRAFT

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	loamy sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 8.4 Min: 7.4
2	7 inches	59 inches	stratified sand to sandy loam	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 8.4 Min: 7.4

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Map ID: 2

Soil Component Name: SANDY ALLUVIAL LAND

Soil Surface Texture: loamy sand

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Somewhat excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

DRAFT

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	11 inches	loamy sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 6.6
2	11 inches	38 inches	stratified sand to loamy sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 6.6
3	38 inches	59 inches	stratified sand to silt loam	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 6.6

Soil Map ID: 3

Soil Component Name: PICO

Soil Surface Texture: sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

DRAFT

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	14 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 8.4 Min: 7.9
2	14 inches	53 inches	stratified sandy loam to loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 8.4 Min: 7.9
3	53 inches	59 inches	stratified gravelly sand to gravelly loamy coarse sand	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 8.4 Min: 7.9

Soil Map ID: 4

Soil Component Name: SAN ANDREAS

Soil Surface Texture: sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	20 inches	sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 5.6 Min: 5.1
2	20 inches	37 inches	sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 5.6 Min: 5.1
3	37 inches	59 inches	loamy coarse sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 5.6 Min: 5.1

DRAFT

Soil Map ID: 5

Soil Component Name: MOCHO

Soil Surface Texture: loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	16 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 14 Min: 4	Max: 8.4 Min: 7.9
2	16 inches	59 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 14 Min: 4	Max: 8.4 Min: 7.9

DRAFT

Soil Map ID: 6

Soil Component Name: METZ

Soil Surface Texture: loamy sand

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Somewhat excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	loamy sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 6.4

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	7 inches	24 inches	stratified sand to sandy loam	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 6.4
3	24 inches	59 inches	stratified loamy very fine sand to silt loam	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 6.4

Soil Map ID: 7

Soil Component Name: SOPER

Soil Surface Texture: gravelly loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	11 inches	gravelly loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0 Min: 0	Max: Min:

DRAFT

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	11 inches	40 inches	very gravelly clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0 Min: 0	Max: Min:
3	40 inches	44 inches	weathered bedrock	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0 Min: 0	Max: Min:

Soil Map ID: 8

Soil Component Name: HUERHUERO

Soil Surface Texture: very fine sandy loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Moderately well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	25 inches	very fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay. FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 4 Min: 1.4	Max: 8.4 Min: 7.9

DRAFT

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	25 inches	38 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay. FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 4 Min: 1.4	Max: 8.4 Min: 7.9
3	38 inches	57 inches	stratified sandy loam to clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay. FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 4 Min: 1.4	Max: 8.4 Min: 7.9

DRAFT

Soil Map ID: 9

Soil Component Name: MOCHO

Soil Surface Texture: loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	16 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 14 Min: 4	Max: 8.4 Min: 7.9
2	16 inches	59 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 14 Min: 4	Max: 8.4 Min: 7.9

DRAFT

Soil Map ID: 10

Soil Component Name: METZ

Soil Surface Texture: loamy sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Somewhat excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	loamy sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 8.4 Min: 7.4

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	7 inches	59 inches	stratified sand to sandy loam	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 8.4 Min: 7.4

Soil Map ID: 11

Soil Component Name: GARRETSON

Soil Surface Texture: loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	22 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 14 Min: 4	Max: 7.8 Min: 6.1
2	22 inches	59 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 14 Min: 4	Max: 7.8 Min: 6.1

DRAFT

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A3	USGS40000142774	1/8 - 1/4 Mile South
C10	USGS40000142789	1/4 - 1/2 Mile WNW
E18	USGS40000142799	1/4 - 1/2 Mile North
H36	USGS40000142790	1/2 - 1 Mile West

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A1	CADWR0000012545	1/8 - 1/4 Mile SSW
A2	CADWR0000037531	1/8 - 1/4 Mile SSW
A4	CAUSGSN00016842	1/8 - 1/4 Mile South
B5	CADWR9000008125	1/8 - 1/4 Mile ESE
B6	CADPR0000003832	1/8 - 1/4 Mile ESE
B7	CADWR0000026120	1/8 - 1/4 Mile SE
8	CADWR9000008126	1/4 - 1/2 Mile WSW
C9	CAUSGSN00017294	1/4 - 1/2 Mile WNW
C11	CADWR0000037638	1/4 - 1/2 Mile WNW
C12	CADWR9000008141	1/4 - 1/2 Mile WNW
C13	CADWR0000031634	1/4 - 1/2 Mile WNW
14	CADWR0000019093	1/4 - 1/2 Mile NNE
D15	CADWR0000014963	1/4 - 1/2 Mile ENE
D16	CADWR0000013609	1/4 - 1/2 Mile ENE
E17	CAUSGSN00012683	1/4 - 1/2 Mile North
E19	CADWR9000008166	1/4 - 1/2 Mile North
E20	CADWR9000008167	1/4 - 1/2 Mile North

DRAFT

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
E21	CADWR0000017451	1/4 - 1/2 Mile North
F22	CADWR9000008106	1/4 - 1/2 Mile ESE
F23	CADWR0000003317	1/4 - 1/2 Mile ESE
24	CADWR9000008062	1/2 - 1 Mile SE
G25	CADWR0000025487	1/2 - 1 Mile SSE
26	CADWR0000015403	1/2 - 1 Mile SW
27	CADWR9000008173	1/2 - 1 Mile NNW
28	CADWR0000031901	1/2 - 1 Mile SSW
G29	CADWR9000008037	1/2 - 1 Mile SSE
G30	CADWR9000008038	1/2 - 1 Mile SSE
G31	CADWR9000008039	1/2 - 1 Mile SSE
H32	CADWR9000008143	1/2 - 1 Mile West
H33	CADWR9000008142	1/2 - 1 Mile West
H34	CADWR0000030436	1/2 - 1 Mile West
H35	CAUSGSN00017649	1/2 - 1 Mile West
H37	CADWR9000008144	1/2 - 1 Mile West
H38	CADWR0000029152	1/2 - 1 Mile West
I39	CADWR0000002251	1/2 - 1 Mile WSW
J40	CADWR9000008046	1/2 - 1 Mile SW
J41	CADWR0000027027	1/2 - 1 Mile SW
I42	CADWR9000008087	1/2 - 1 Mile WSW
I43	CADWR0000036237	1/2 - 1 Mile WSW
44	CADWR0000024943	1/2 - 1 Mile NE
45	CADWR0000000422	1/2 - 1 Mile NNE

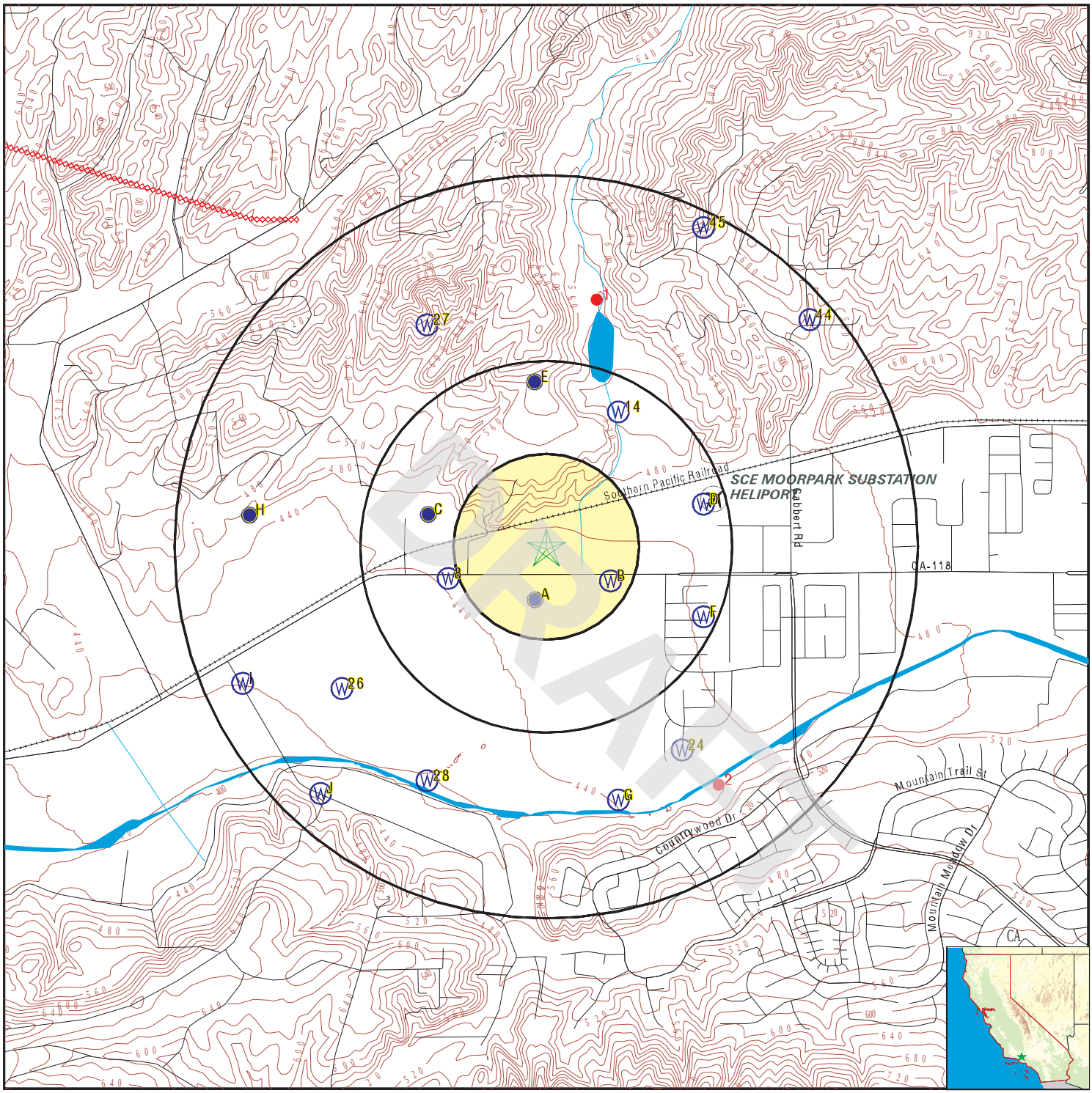
OTHER STATE DATABASE INFORMATION

STATE OIL/GAS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	CAOG14000000379	1/2 - 1 Mile NNE
2	CAOG14000000365	1/2 - 1 Mile SE

DRAFT

PHYSICAL SETTING SOURCE MAP - 6729552.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Airports
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location
- HD Closest Hydrogeological Data
- Oil, gas or related wells

SITE NAME:	California 118	CLIENT:	BBG Assessment Inc.
ADDRESS:	California 118 Moorpark CA 93021	CONTACT:	Haley Zeigler
		INQUIRY #:	6729552.2s
LAT/LONG:	34.279935 / 118.912395	DATE:	November 01, 2021 2:22 pm

Copyright © 2021 EDR, Inc. © 2015 TomTom Rel. 2015.

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

A1
SSW
1/8 - 1/4 Mile
Lower

CA WELLS **CADWR0000012545**

Well ID:	02N19W07C001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	02N19W07C001S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=02N19W07C001S&store_num=		
GeoTracker Data:	Not Reported		

A2
SSW
1/8 - 1/4 Mile
Lower

CA WELLS **CADWR0000037531**

Well ID:	02N19W07C003	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	02N19W07C003	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=02N19W07C003&store_num=		
GeoTracker Data:	Not Reported		

A3
South
1/8 - 1/4 Mile
Lower

FED USGS **USGS40000142774**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	002N019W07C001S	Type:	Well
Description:	Not Reported	HUC:	18070103
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	California Coastal Basin aquifers		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	194812	Well Depth:	176
Well Depth Units:	ft	Well Hole Depth:	256
Well Hole Depth Units:	ft		

A4
South
1/8 - 1/4 Mile
Lower

CA WELLS **CAUSGSN00016842**

Well ID:	USGS-341640118544301	Well Type:	UNK
Source:	United States Geological Survey		
Other Name:	USGS-341640118544301	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=USGSNEW&samp_date=&global_id=&assigned_name=USGS-341640118544301&store_num=		
GeoTracker Data:	Not Reported		

DRAFT

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

B5
ESE
1/8 - 1/4 Mile
Higher

CA WELLS **CADWR9000008125**

State Well #:	02N19W07B002S	Station ID:	53475
Well Name:	02N19W07B02S	Basin Name:	Las Posas Valley
Well Use:	Irrigation	Well Type:	Single Well
Well Depth:	590	Well Completion Rpt #:	Not Reported

B6
ESE
1/8 - 1/4 Mile
Higher

CA WELLS **CADPR0000003832**

Well ID:	106063	Well Type:	UNK
Source:	Department of Pesticide Regulation		
Other Name:	106063	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DPR&samp_date=&global_id=&assigned_name=106063&store_num=		
GeoTracker Data:	Not Reported		

B7
SE
1/8 - 1/4 Mile
Higher

CA WELLS **CADWR0000026120**

Well ID:	02N19W07B001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	02N19W07B001S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=02N19W07B001S&store_num=		
GeoTracker Data:	Not Reported		

8
WSW
1/4 - 1/2 Mile
Lower

CA WELLS **CADWR9000008126**

State Well #:	02N19W07D002S	Station ID:	53482
Well Name:	02N19W07D02S	Basin Name:	Las Posas Valley
Well Use:	Irrigation	Well Type:	Single Well
Well Depth:	170	Well Completion Rpt #:	35604

C9
WNW
1/4 - 1/2 Mile
Lower

CA WELLS **CAUSGSN00017294**

Well ID:	USGS-341652118550101	Well Type:	UNK
Source:	United States Geological Survey		
Other Name:	USGS-341652118550101	GAMA PFAS Testing:	Not Reported

DRAFT

Groundwater Quality Data: https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=USGSNEW&samp_date=&global_id=&assigned_name=USGS-341652118550101&store_num=
GeoTracker Data: Not Reported

C10
WNW
1/4 - 1/2 Mile
Lower

FED USGS **USGS40000142789**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	002N019W06N003S	Type:	Well
Description:	Not Reported	HUC:	18070103
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	California Coastal Basin aquifers		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	1917	Well Depth:	132
Well Depth Units:	ft	Well Hole Depth:	134
Well Hole Depth Units:	ft		

C11
WNW
1/4 - 1/2 Mile
Lower

CA WELLS **CADWR0000037638**

Well ID:	02N19W06N003S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	02N19W06N003S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=02N19W06N003S&store_num=		
GeoTracker Data:	Not Reported		

C12
WNW
1/4 - 1/2 Mile
Lower

CA WELLS **CADWR9000008141**

State Well #:	02N19W06N003S	Station ID:	2955
Well Name:	Not Reported	Basin Name:	Las Posas Valley
Well Use:	Unknown	Well Type:	Unknown
Well Depth:	0	Well Completion Rpt #:	Not Reported

C13
WNW
1/4 - 1/2 Mile
Higher

CA WELLS **CADWR0000031634**

Well ID:	02N19W06N002S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	02N19W06N002S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=02N19W06N002S&store_num=		
GeoTracker Data:	Not Reported		

DRAFT

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

14
NNE
1/4 - 1/2 Mile
Higher | **CA WELLS** | **CADWR0000019093**

Well ID:	02N19W06K001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	02N19W06K001S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=02N19W06K001S&store_num=		
GeoTracker Data:	Not Reported		

D15
ENE
1/4 - 1/2 Mile
Higher | **CA WELLS** | **CADWR0000014963**

Well ID:	02N19W06R002S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	02N19W06R002S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=02N19W06R002S&store_num=		
GeoTracker Data:	Not Reported		

D16
ENE
1/4 - 1/2 Mile
Higher | **CA WELLS** | **CADWR0000013609**

Well ID:	02N19W06R001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	02N19W06R001S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=02N19W06R001S&store_num=		
GeoTracker Data:	Not Reported		

E17
North
1/4 - 1/2 Mile
Higher | **CA WELLS** | **CAUSGSN00012683**

Well ID:	USGS-341711118544301	Well Type:	UNK
Source:	United States Geological Survey		
Other Name:	USGS-341711118544301	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=USGSNEW&samp_date=&global_id=&assigned_name=USGS-341711118544301&store_num=		
GeoTracker Data:	Not Reported		

DRAFT

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

E18
North
1/4 - 1/2 Mile
Higher

FED USGS **USGS40000142799**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	002N019W06F001S	Type:	Well
Description:	Not Reported	HUC:	18070103
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	California Coastal Basin aquifers		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19740103	Well Depth:	550
Well Depth Units:	ft	Well Hole Depth:	612
Well Hole Depth Units:	ft		

E19
North
1/4 - 1/2 Mile
Higher

CA WELLS **CADWR9000008166**

State Well #:	02N19W06F001S	Station ID:	2954
Well Name:	Not Reported	Basin Name:	Las Posas Valley
Well Use:	Unknown	Well Type:	Unknown
Well Depth:	0	Well Completion Rpt #:	Not Reported

E20
North
1/4 - 1/2 Mile
Higher

CA WELLS **CADWR9000008167**

State Well #:	Not Reported	Station ID:	53503
Well Name:	02N19W06F01S	Basin Name:	Las Posas Valley
Well Use:	Observation	Well Type:	Single Well
Well Depth:	550	Well Completion Rpt #:	61555

E21
North
1/4 - 1/2 Mile
Higher

CA WELLS **CADWR0000017451**

Well ID:	02N19W06F001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	02N19W06F001S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=02N19W06F001S&store_num=		
GeoTracker Data:	Not Reported		

DRAFT

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

F22
ESE
1/4 - 1/2 Mile
Higher

CA WELLS **CADWR9000008106**

State Well #:	02N19W07A003S	Station ID:	2956
Well Name:	Not Reported	Basin Name:	Las Posas Valley
Well Use:	Unknown	Well Type:	Unknown
Well Depth:	0	Well Completion Rpt #:	Not Reported

F23
ESE
1/4 - 1/2 Mile
Higher

CA WELLS **CADWR0000003317**

Well ID:	02N19W07A003S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	02N19W07A003S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=02N19W07A003S&store_num=		
GeoTracker Data:	Not Reported		

24
SE
1/2 - 1 Mile
Higher

CA WELLS **CADWR9000008062**

State Well #:	02N19W07G001S	Station ID:	53504
Well Name:	02N19W07G01S	Basin Name:	Las Posas Valley
Well Use:	Observation	Well Type:	Single Well
Well Depth:	95	Well Completion Rpt #:	Not Reported

G25
SSE
1/2 - 1 Mile
Lower

CA WELLS **CADWR0000025487**

Well ID:	02N19W07K001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	02N19W07K001S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=02N19W07K001S&store_num=		
GeoTracker Data:	Not Reported		

26
SW
1/2 - 1 Mile
Lower

CA WELLS **CADWR0000015403**

Well ID:	02N20W12H002S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	02N20W12H002S	GAMA PFAS Testing:	Not Reported

DRAFT

Groundwater Quality Data: https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=02N20W12H002S&store_num=
GeoTracker Data: Not Reported

27
NNW
1/2 - 1 Mile
Higher

CA WELLS **CADWR9000008173**

State Well #:	02N19W06E001S	Station ID:	2953
Well Name:	Not Reported	Basin Name:	Las Posas Valley
Well Use:	Unknown	Well Type:	Unknown
Well Depth:	0	Well Completion Rpt #:	Not Reported

28
SSW
1/2 - 1 Mile
Lower

CA WELLS **CADWR0000031901**

Well ID:	02N19W07M001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	02N19W07M001S	GAMA PFAS Testing:	Not Reported

Groundwater Quality Data: https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=02N19W07M001S&store_num=
GeoTracker Data: Not Reported

G29
SSE
1/2 - 1 Mile
Lower

CA WELLS **CADWR9000008037**

State Well #:	02N19W07K002S	Station ID:	53505
Well Name:	02N19W07K02S	Basin Name:	Las Posas Valley
Well Use:	Observation		
Well Type:	Part of a nested/multi-completion well		
Well Depth:	730	Well Completion Rpt #:	Not Reported

G30
SSE
1/2 - 1 Mile
Lower

CA WELLS **CADWR9000008038**

State Well #:	02N19W07K003S	Station ID:	53506
Well Name:	02N19W07K03S	Basin Name:	Las Posas Valley
Well Use:	Observation		
Well Type:	Part of a nested/multi-completion well		
Well Depth:	300	Well Completion Rpt #:	Not Reported

DRAFT

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

	Database	EDR ID Number
G31 **SSE** **1/2 - 1 Mile** **Lower**	**CA WELLS**	**CADWR9000008039**

State Well #:	02N19W07K004S	Station ID:	53507
Well Name:	02N19W07K04S	Basin Name:	Las Posas Valley
Well Use:	Observation		
Well Type:	Part of a nested/multi-completion well		
Well Depth:	150	Well Completion Rpt #:	Not Reported

	Database	EDR ID Number
H32 **West** **1/2 - 1 Mile** **Lower**	**CA WELLS**	**CADWR9000008143**

State Well #:	Not Reported	Station ID:	53483
Well Name:	02N20W01Q01S	Basin Name:	Las Posas Valley
Well Use:	Irrigation	Well Type:	Single Well
Well Depth:	310	Well Completion Rpt #:	Not Reported

	Database	EDR ID Number
H33 **West** **1/2 - 1 Mile** **Lower**	**CA WELLS**	**CADWR9000008142**

State Well #:	02N20W01Q002S	Station ID:	53481
Well Name:	02N20W01Q02S	Basin Name:	Las Posas Valley
Well Use:	Irrigation	Well Type:	Single Well
Well Depth:	700	Well Completion Rpt #:	068923

	Database	EDR ID Number
H34 **West** **1/2 - 1 Mile** **Higher**	**CA WELLS**	**CADWR0000030436**

Well ID:	02N20W01Q002S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	02N20W01Q002S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=02N20W01Q002S&store_num=		
GeoTracker Data:	Not Reported		

	Database	EDR ID Number
H35 **West** **1/2 - 1 Mile** **Lower**	**CA WELLS**	**CAUSGSN00017649**

Well ID:	USGS-341652118553101	Well Type:	UNK
Source:	United States Geological Survey		
Other Name:	USGS-341652118553101	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=USGSNEW&samp_date=&global_id=&assigned_name=USGS-341652118553101&store_num=		

DRAFT

GeoTracker Data: Not Reported

H36
West
1/2 - 1 Mile
Lower

FED USGS **USGS40000142790**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	002N020W01Q001S	Type:	Well
Description:	Not Reported	HUC:	18070103
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	California Coastal Basin aquifers		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	1922	Well Depth:	157
Well Depth Units:	ft	Well Hole Depth:	310
Well Hole Depth Units:	ft		

H37
West
1/2 - 1 Mile
Higher

CA WELLS **CADWR9000008144**

State Well #:	02N20W01Q001S	Station ID:	2964
Well Name:	Not Reported	Basin Name:	Las Posas Valley
Well Use:	Unknown	Well Type:	Unknown
Well Depth:	0	Well Completion Rpt #:	Not Reported

H38
West
1/2 - 1 Mile
Higher

CA WELLS **CADWR0000029152**

Well ID:	02N20W01Q001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	02N20W01Q001S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=02N20W01Q001S&store_num=		
GeoTracker Data:	Not Reported		

I39
WSW
1/2 - 1 Mile
Lower

CA WELLS **CADWR0000002251**

Well ID:	02N20W12G001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	02N20W12G001S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=02N20W12G001S&store_num=		
GeoTracker Data:	Not Reported		

DRAFT

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

J40
SW
1/2 - 1 Mile
Lower

CA WELLS **CADWR9000008046**

State Well #:	02N20W12J001S	Station ID:	2972
Well Name:	Not Reported	Basin Name:	Las Posas Valley
Well Use:	Unknown	Well Type:	Unknown
Well Depth:	0	Well Completion Rpt #:	Not Reported

J41
SW
1/2 - 1 Mile
Lower

CA WELLS **CADWR0000027027**

Well ID:	02N20W12J001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	02N20W12J001S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=02N20W12J001S&store_num=		
GeoTracker Data:	Not Reported		

I42
WSW
1/2 - 1 Mile
Lower

CA WELLS **CADWR9000008087**

State Well #:	02N20W12G002S	Station ID:	26482
Well Name:	Not Reported	Basin Name:	Las Posas Valley
Well Use:	Unknown	Well Type:	Unknown
Well Depth:	0	Well Completion Rpt #:	Not Reported

I43
WSW
1/2 - 1 Mile
Lower

CA WELLS **CADWR0000036237**

Well ID:	02N20W12G002S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	02N20W12G002S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=02N20W12G002S&store_num=		
GeoTracker Data:	Not Reported		

44
NE
1/2 - 1 Mile
Higher

CA WELLS **CADWR0000024943**

Well ID:	02N19W05E003S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	02N19W05E003S	GAMA PFAS Testing:	Not Reported

DRAFT

Groundwater Quality Data: https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=02N19W05E003S&store_num=
GeoTracker Data: Not Reported

45
NNE
1/2 - 1 Mile
Higher

CA WELLS **CADWR0000000422**

Well ID: 02N19W06A002S Well Type: UNK
Source: Department of Water Resources
Other Name: 02N19W06A002S GAMA PFAS Testing: Not Reported
Groundwater Quality Data: https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=02N19W06A002S&store_num=
GeoTracker Data: Not Reported

DRAFT

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance

Database EDR ID Number

1
NNE
1/2 - 1 Mile

OIL_GAS **CAOG14000000379**

API #:	0411105688	Well #:	1
Well Status:	Plugged	Well Type:	Dry Hole
Lease Name:	Gabbert	Field Name:	Any Field
Area Name:	Any Area	GIS Source:	hud
Confidential Well:	N	Directionally Drilled:	N
Spud Date:	Not Reported		

2
SE
1/2 - 1 Mile

OIL_GAS **CAOG14000000365**

API #:	0411105674	Well #:	1
Well Status:	Plugged	Well Type:	Dry Hole
Lease Name:	Darby	Field Name:	Any Field
Area Name:	Any Area	GIS Source:	hud
Confidential Well:	N	Directionally Drilled:	N
Spud Date:	Not Reported		

DRAFT

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
93021	255	11

Federal EPA Radon Zone for VENTURA County: 1

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 93021

Number of sites tested: 4

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	1.625 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

DRAFT

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

DRAFT

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

OTHER STATE DATABASE INFORMATION

Groundwater Ambient Monitoring & Assessment Program
State Water Resources Control Board
Telephone: 916-341-5577
The GAMA Program is Californias comprehensive groundwater quality monitoring program. GAMA collects data by testing the untreated, raw water in different types of wells for naturally-occurring and man-made chemicals. The GAMA data includes Domestic, Monitoring and Municipal well types from the following sources, Department of Water Resources, Department of Heath Services, EDF, Agricultural Lands, Lawrence Livermore National Laboratory, Department of Pesticide Regulation, United States Geological Survey, Groundwater Ambient Monitoring and Assessment Program and Local Groundwater Projects.

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

California Oil and Gas Well Locations
Source: Dept of Conservation, Geologic Energy Management Division
Telephone: 916-323-1779
Oil and Gas well locations in the state.

California Earthquake Fault Lines
Source: California Division of Mines and Geology
The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

RADON

State Database: CA Radon
Source: Department of Public Health
Telephone: 916-210-8558
Radon Database for California

DRAFT

PHYSICAL SETTING SOURCE RECORDS SEARCHED

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

© 2015 TomTom North America, Inc. All rights reserved. This material is proprietary and the subject of copyright protection and other intellectual property rights owned by or licensed to Tele Atlas North America, Inc. The use of this material is subject to the terms of a license agreement. You will be held liable for any unauthorized copying or disclosure of this material.

DRAFT

APPENDIX 5

Historical Documentation

DRAFT

Moorpark Land

Not Reported

Moorpark, CA 93021

Inquiry Number: 5274994.5

April 30, 2018

DRAFT

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

04/30/18

Site Name:

Moorpark Land
Not Reported
Moorpark, CA 93021
EDR Inquiry # 5274994.5

Client Name:

BBG Assessment
4801 Glenwood, Suite 200
Raleigh, NC 27607
Contact: Kim Sweeney

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	Scale	Details	Source
2014	1"=500'	Flight Year: 2014	USDA/NAIP
2010	1"=500'	Flight Year: 2010	USDA/NAIP
2005	1"=500'	Flight Year: 2005	USDA/NAIP
1994	1"=500'	Acquisition Date: June 01, 1994	USGS/DOQQ
1985	1"=500'	Flight Date: September 12, 1985	USDA
1978	1"=500'	Flight Date: September 21, 1978	USDA
1969	1"=500'	Flight Date: July 25, 1969	USGS
1959	1"=500'	Flight Date: October 04, 1959	USDA
1952	1"=500'	Flight Date: December 22, 1952	USGS
1947	1"=500'	Flight Date: August 20, 1947	USGS
1938	1"=500'	Flight Date: May 09, 1938	USDA
1927	1"=500'	Flight Date: January 01, 1927	USGS

DRAFT

When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.

Disclaimer - Copyright and Trademark Notice

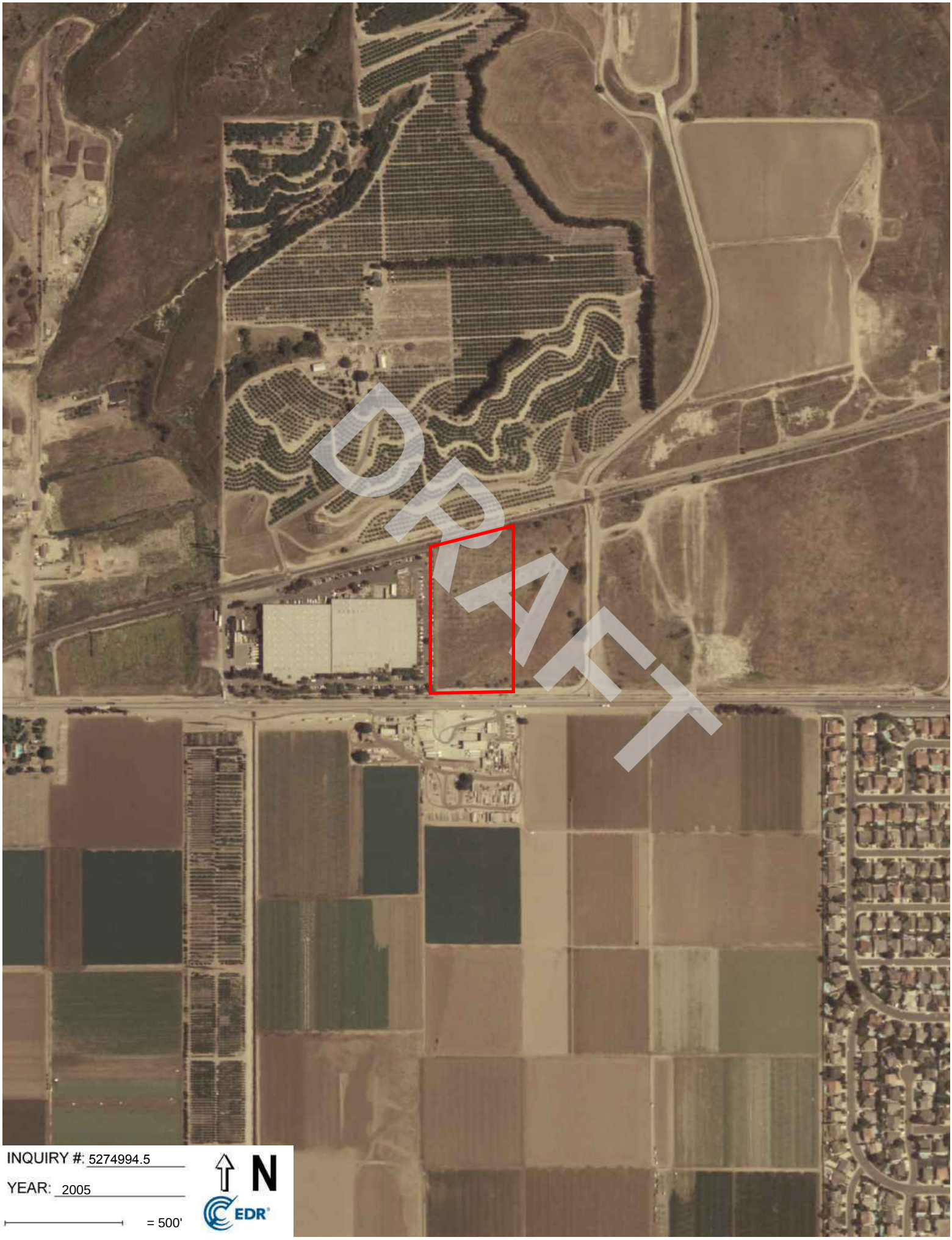
This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT. Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2018 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.


DRAFT
INQUIRY #: 5274994.5
YEAR: 2014
= 500'
N
EDR


DRAFT
INQUIRY #: 5274994.5
YEAR: 2010
= 500'
N
EDR



INQUIRY #: 5274994.5

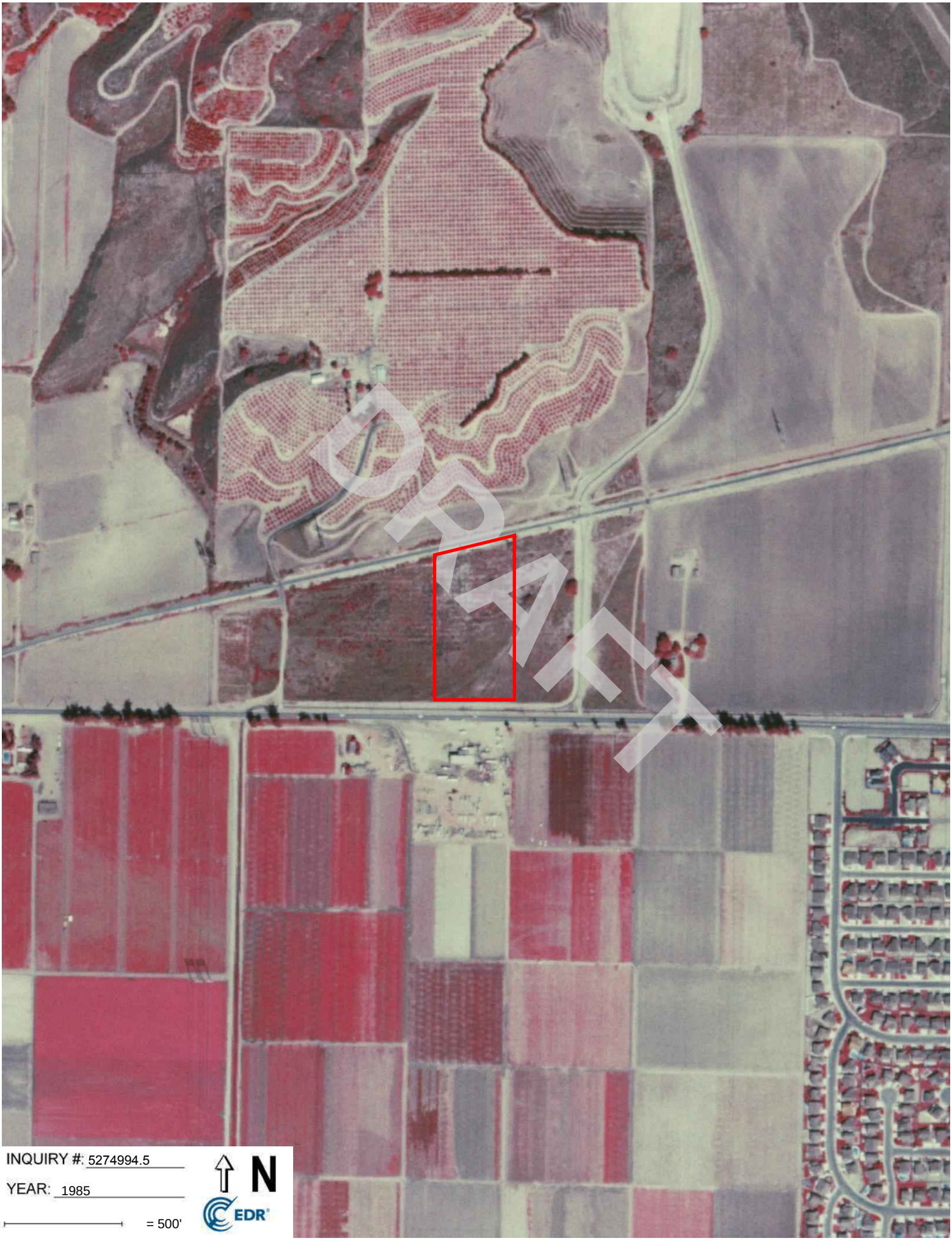
YEAR: 2005

= 500'

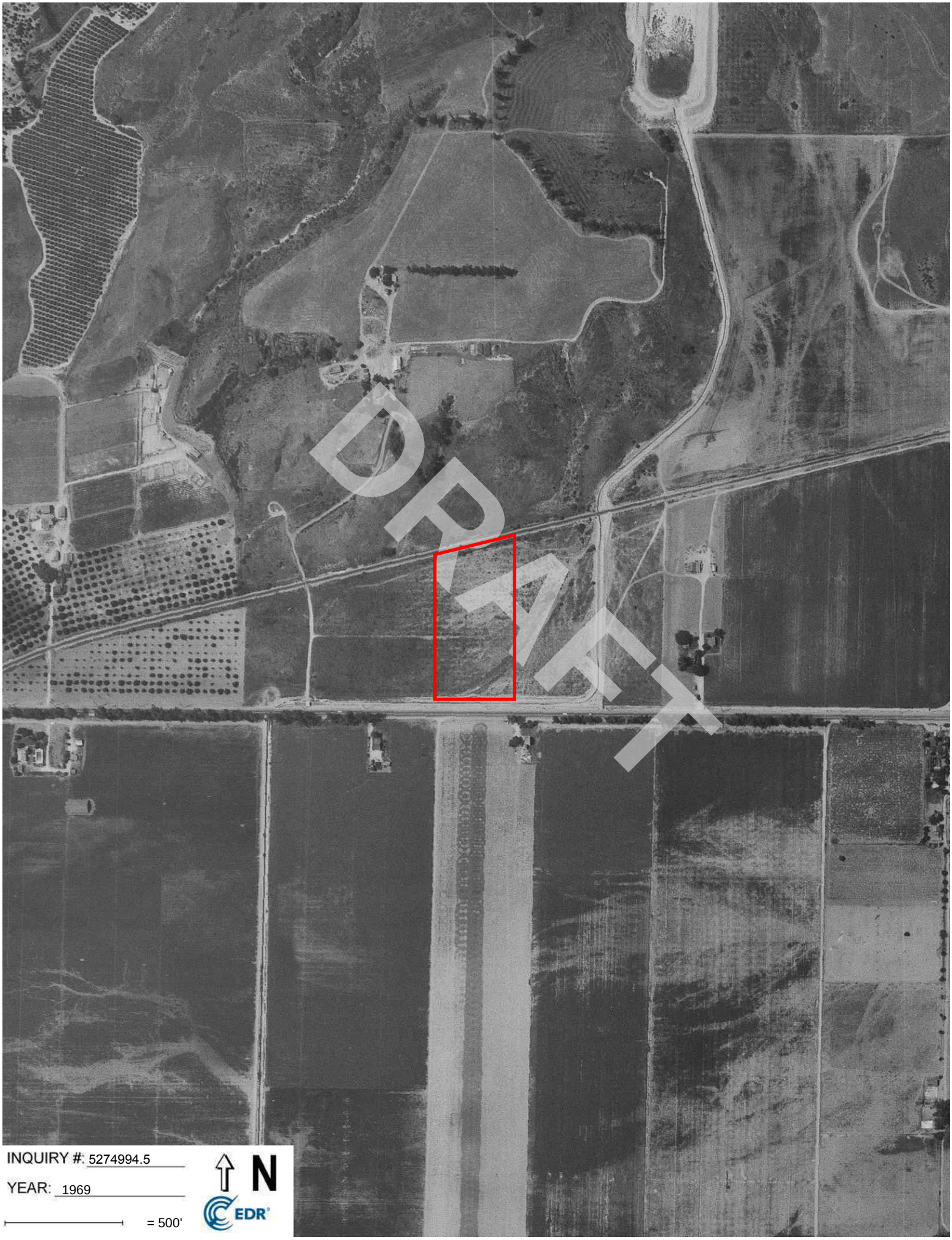
N

EDR


DRAFT
INQUIRY #: 5274994.5
YEAR: 1994
= 500'
N
EDR


DRAFT
INQUIRY #: 5274994.5
YEAR: 1985
= 500'
N
EDR


DRAFT
INQUIRY #: 5274994.5
YEAR: 1978
= 500'
N
EDR


DRAFT
INQUIRY #: 5274994.5
YEAR: 1969
= 500'
N
EDR


DRAFT
INQUIRY #: 5274994.5
YEAR: 1959
= 500'
N
EDR


DRAFT
INQUIRY #: 5274994.5
YEAR: 1952
= 500'
N
EDR


DRAFT
INQUIRY #: 5274994.5
YEAR: 1947
= 500'
N
EDR


DRAFT
INQUIRY #: 5274994.5
YEAR: 1938
= 500'
N
EDR


DRAFT
INQUIRY #: 5274994.5
YEAR: 1927
= 500'
N
EDR

Moorpark Land

Not Reported

Moorpark, CA 93021

Inquiry Number: 5274994.3

April 28, 2018

DRAFT

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

04/28/18

Site Name:

Moorpark Land
Not Reported
Moorpark, CA 93021
EDR Inquiry # 5274994.3

Client Name:

BBG Assessment
4801 Glenwood, Suite 200
Raleigh, NC 27607
Contact: Kim Sweeney

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by BBG Assessment were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Certification # EED6-4090-945E

PO # 0518001002

Project Moorpark Land

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

Sanborn® Library search results

Certification #: EED6-4090-945E

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

The Sanborn Library LLC Since 1866™

DRAFT

Limited Permission To Make Copies

BBG Assessment (the client) is permitted to make up to FIVE photocopies of this Sanborn Map transmittal and each fire insurance map accompanying this report solely for the limited use of its customer. No one other than the client is authorized to make copies. Upon request made directly to an EDR Account Executive, the client may be permitted to make a limited number of additional photocopies. This permission is conditioned upon compliance by the client, its customer and their agents with EDR's copyright policy; a copy of which is available upon request.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT. Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2018 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

APPENDIX 6

Personnel Qualifications

DRAFT

NASIM AHMED

Education and Technical Training

B.S., Chemical Engineering, BUET, Bangladesh, 1988
M.S., Chemical Engineering, USC, Los Angeles, California, 1991

Licenses and Certifications

Registered Environmental Property Assessor, (REPA-118102)
Asbestos Building Inspector (ABII011612000BN1986)

Experience

Mr. Ahmed has over 15 years of experience in the environmental due diligence industry. He has conducted Environmental Site Assessments (ESAs) for a wide range of local and national clients, including banks, agency lenders, investment banks, life companies, law firms and property owners. The properties he has evaluated have included multifamily residential, retail, office, industrial and hospitality facilities.

Mr. Ahmed has conducted hundreds of ESAs in accordance with ASTM E1527, the USEPA All Appropriate Inquiry rules, Fannie Mae Delegated Underwriting Standards, Freddie Mac guidelines and other client specific scopes of work. Based on his experience and education, he meets the definition of an Environmental Professional as defined in §312.10 of 40 CFR 312. His environmental background includes a detailed understanding of the risks associated with hazardous and regulated materials storage, use generation and disposal, above ground and underground storage tanks and polychlorinated biphenyls (PCBs), as well as the ASTM non-scope considerations of asbestos, lead-based paint, radon and microbial growth.

Mr. Ahmed has performed Phase II Subsurface Investigations on a wide range of properties, including but not limited to current and historical dry-cleaning operations, industrial properties and gasoline service station. He has performed regulatory compliance assessment duties included facility inspection, permit determination, regulatory agency requirement determination, and hazard communication compliance (including plans and programs determined by local agencies) for various light and heavy industrial operations. Additionally, he has developed and implement asbestos, lead-based paint, and radon operations and maintenance program.

DRAFT

TESSA M. BARTH

Education and Technical Training

Towson University, M.A., Geography and Environmental Planning, 2016
University of Maryland Baltimore County, B.S., Geography and Environmental Science, 2006

Licenses and Certifications

Asbestos Inspector, AHERA, MD, VA
Lead-Inspector, MD, VA
Radon Residential Measurement Provider, NEHA/NRRP
Water Sampler Certification, Maryland Rural Water Association
NITON Spectrum Analyzer Operator
INNOVX Spectrum Analyzer Operator

Experience

Tessa Barth has over 10 years of experience in the environmental and due diligence consulting industry. She has conducted Environmental Site Assessments (ESAs), lead based paint inspections and risk assessments, and asbestos surveys for a wide range of local and national clients, including banks, agency lenders, investment banks, life companies, law firms and property owners. The properties she has evaluated have included multifamily residential complexes, retail/office developments, industrial facilities, gas station/convenience stores, large commercial multi-tenant retail centers, and nursing home/assisted living facilities.

Tessa Barth has conducted hundreds of ESAs in accordance with ASTM E1527, the USEPA All Appropriate Inquiry rules, Fannie Mae Delegated Underwriting Standards, Freddie Mac guidelines, and other client specific scopes of work. Based on her experience and education, she meets the definition of an Environmental Professional as defined in §312.10 of 40 CFR 312. Her environmental background includes a detailed understanding of the risks associated with hazardous and regulated materials storage, use generation and disposal, above ground and underground storage tanks and polychlorinated biphenyls (PCBs), as well as the ASTM non-scope considerations of asbestos, lead-based paint, radon and microbial growth. In addition, she is experienced with site characterizations, risk assessment, remediation and regulatory coordination.

DRAFT

4615 Southwest Freeway, Suite 810, Houston, Texas 77027
Main Office: 713-942-8980 Fax: 713-942-8987

Jeffery Smith

Managing Director

Education and Technical Training

- B.S. – Environmental Engineering – Columbia Southern University

Licenses and Certifications

- Accredited EPA Asbestos Hazard Emergency Response Act (AHERA) Inspector, 1992 – current
- State of Colorado Licensed Asbestos Inspector, 1995 - current
- State of Colorado Approved Lead-Based Paint Inspector Training
- HUD Visual Lead-Based-Paint Assessment Training
- Environmental Professional as defined under ASTM E 1527-13 Section 4.3 and Appendix X2 with over five (5) years' experience performing investigations of surface and subsurface environmental conditions.
- Wood Boring Organism NACHI Training
- ASTM Training including All Appropriate Inquiry (AAI) Training
- Hazardous Waste Site Operations (OSHA 40 hr. Training)
- Nuclear Regulatory Commission Training (ARCO, New Mexico site specific)
- Colorado Licensed Underground Storage Tank Installer Certification
- Confined Space Entry Supervisor Training (OSHA 16 hr. Training) Certification
- HM-181 Hazardous Materials Packaging and Shipping Training

Experience

Mr. Smith has over 30 years of experience in the environmental and physical needs due diligence industry. He has conducted Physical Needs Assessments and Environmental Site Assessments (ESAs) for a wide range of local and national clients, including banks, agency lenders, investment banks, life companies, law firms and property owners. The properties he has evaluated have included multifamily residential, retail, office, industrial and hospitality facilities. Mr. Smith has conducted hundreds of ESAs in accordance with ASTM E1527, the USEPA All Appropriate Inquiry rules, Fannie Mae Delegated Underwriting Standards, Freddie Mac guidelines, HUD MAP and LEAN guidelines, and other client specific scopes of work. Mr. Smith also has substantial experience in the completion of asbestos and lead-based paint surveys, Phase II Sub-Surface Investigations, Emergency Spill Responses and Hazardous Waste Management. An overview of Mr. Smith's experience is summarized below:

- Phase I ESAs (Scopes: HUD, Fannie Mae, Freddie Mac, ASTM & CMBS)
- HUD Scope Environmental Reviews (Part 50 & 58) including HEROS
- Hazardous Waste Consulting & Remediation
- Physical Needs Assessments (Scopes: HUD MAP, HUD LEAN, LIHTC, ASTM, Freddie, Fannie Mae & CMBS)
- Phase II Sub-Surface Investigations
- Asbestos, Lead Based Paint, Mold & Radon Surveys

DRAFT

PRELIMINARY HYDROLOGY CALCULATIONS

FOR

PENTAIR
10951 LOS ANGELES AVENUE
MOORPARK, CALIFORNIA

PREPARED FOR

AMIR DEVELOPMENT CO.
ATTN: STEVEN JUHNKE
8730 WILSHIRE BLVD, SUITE 300
BEVERLY HILLS, CA 90211
PHONE: (310) 657-8987

JANUARY 10, 2022
REVISED: MARCH 10, 2022
REVISED: MAY 24, 2022

JOB NO. 3885

PREPARED BY

THIENES ENGINEERING
14349 FIRESTONE BLVD.
LA MIRADA, CA 90638
PHONE (714) 521-4811
FAX (714) 521-4173

PRELIMINARY HYDROLOGY CALCULATIONS

FOR

PENTAIR
10951 LOS ANGELES AVENUE

PREPARED BY RICKY HWA
UNDER THE SUPERVISION OF



05/24/2022

REINHARD STENZEL DATE:
R.C.E. 56155
EXP. 12/31/22

INTRODUCTION

A: PROJECT LOCATION

The project site is located at 10951 Los Angeles Avenue, west of Tierra Rejada Road, east of Grimes Canyon Road in the City of Moorpark, California. Please see next page for vicinity map.

B: STUDY PURPOSE

The purpose of this study is to determine the existing and proposed condition 100-year peak flow rates from the project site, which drains to Gabbert Canyon Channel along the site's southerly boundary.

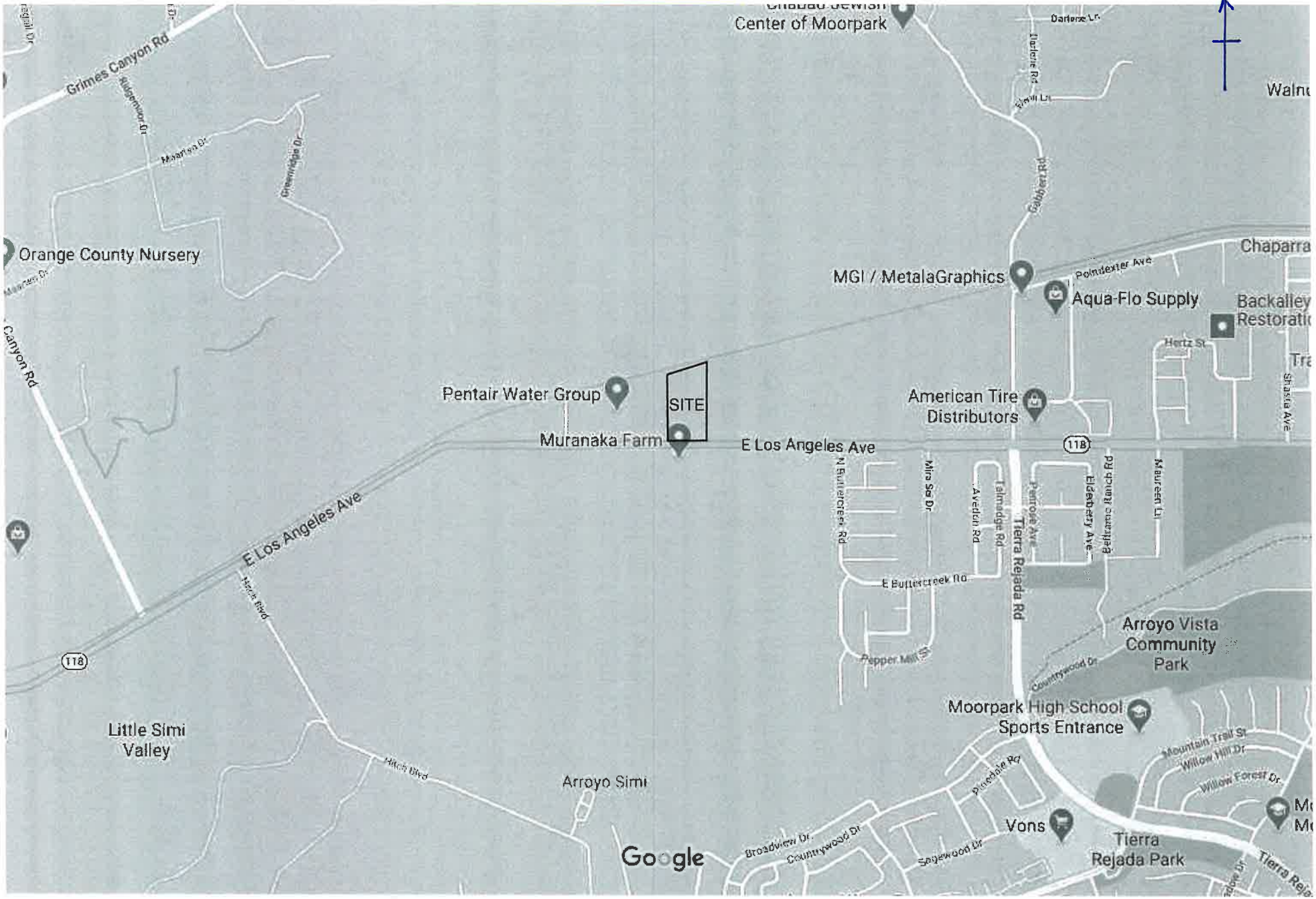
C: PROJECT STAFF:

Thienes Engineering staff involved in this study include:

Reinhard Stenzel
Ricky Hwa

Google Maps

VICINITY MAP



DISCUSSION

The project site encompasses approximately 5.65 acres. Proposed improvements consist of one commercial type building of 90,566 square feet. There will be a truck yard west of the building, vehicle parking on the north, east, and south sides, and landscape areas scattered throughout the site. The portion of the existing Gabbert Canyon Channel under the site's proposed entry driveway will be replaced with a reinforced concrete box culvert, while the remainder of the channel will remain unchanged.

Master Plan of Drainage

Per City of Moorpark Master Plan of Drainage, by Hawks & Associates dated April 1995, the project site is located between Node 518BC and Node 519B, tributary to the Gabbert Canyon Channel. Per as-built plans, the existing channel is deficient with a total capacity of 1,070 cfs at the project site frontage. This is in comparison to tributary flow rates of 3,245 cfs at Node 518 BC and 3,250 cfs at Node 519B per modified rational method hydrology data for the City's Master Plan of Drainage. The Gabbert & Walnut Canyon Channels Flood Control Deficiency Study, by PACE dated July 2005, indicated tributary flow rates of 2,944 cfs at Node 114AB upstream of the site and 2,945 cfs at Node 115A downstream of the site. Since the existing channel is deficient, proposed condition discharge from the site is restricted to 90 percent of existing condition runoff, per email from Ventura County Watershed Protection District.

Per Flood Insurance Rate Map Number 06111C0818E dated January 20, 2010, a majority of the project is located in "Zone X", or "areas determined to be outside the 0.2 percent annual chance floodplain". The south end of the site, adjacent to Gabbert Canyon Channel, is located in "Zone X Shaded", or areas of 0.2 percent annual chance flood; areas of 1 percent annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1 percent annual chance flood". The channel's flood elevation indicated on FIRM is interpolated to be 447.50 at the project site's westerly end frontage and 449.50 at the easterly end frontage. This is approximately equal to the top of channel elevation per as-built plan, or 447.20 at Station 41+98 (west end of site) and 449.30 at Station 45+47 (east end of site), adjusted up 2.5 feet to match 1988 datum.

Please see Appendix "A" for referenced County rainfall maps, as-built channel plan, drainage restriction email, and the City's Master Plan of Drainage.

Existing Condition

Under existing condition, the project site is an undeveloped dirt lot. It generally surface flows south-westerly to Gabbert Canyon Channel. The existing condition 100-year peak flow rate for the project site (Subarea 20A on existing condition hydrology map, 5.65

acres) is approximately 6.0 cfs. This results in an allowable proposed condition site discharge rate of 5.4 cfs, or 90 percent of 6.0 cfs.

An open dirt area immediately to the north of the project site (Subarea 21B, 0.40 acre) surface drains southerly to the site. The 100-year peak flow rate from this northerly offsite area is approximately 0.7 cfs.

A portion of the easterly neighboring dirt lot (Subarea 22C, 2.60 acres) surface drains south-westerly to the site. The 100-year peak flow rate from this easterly offsite area is approximately 2.9 cfs.

Finally, the existing northerly hillside slopes, north of the railroad tracks (Subareas 23D-25D, 26.30 acres), surface drain southerly and cross under the railroad via a 36-inch pipe, then discharge onto the project site. The 100-year peak flow rate from the northerly hillside area is approximately 19.3 cfs.

See Appendix "B" for existing condition hydrology calculations and Appendix "D" for existing condition hydrology map.

Proposed Condition

The proposed building, westerly truck yard and northerly parking lot (Subareas 1A-5A, 3.90 acres) drain to catch basins in the truck yard. Runoffs are then conveyed southerly via a proposed onsite storm drain that will connect to the existing Gabbert Canyon Channel. The proposed condition 100-year peak flow rate for these onsite areas is approximately 12.6 cfs.

The easterly and southerly parking lots (Subareas 6B-9B, 1.15 acres) drain southerly to a catch basin in the southerly parking lot. Runoffs from these parking lots are then conveyed westerly via a proposed lateral to the same proposed onsite storm drain system, then southerly to Gabbert Canyon Channel. The 100-year peak flow rate for these parking lots is approximately 2.6 cfs.

The south-westerly drive aisle, immediately north of the site's entry driveway (Subarea 10C, 0.25 acre) drain to a catch basin in the drive aisle. Runoffs from the drive aisle are then conveyed southerly via the same proposed onsite storm drain system to Gabbert Canyon Channel. The 100-year peak flow rate for the south-westerly drive aisle is approximately 0.8 cfs.

The site's southerly frontage landscape area (Subarea 11D, 0.30 acre) will surface drain southerly to Gabbert Canyon Channel under proposed condition. The 100-year peak flow rate for the frontage landscape area is approximately 0.6 cfs.

The total proposed condition 100-year peak flow rate from the project site tributary to Gabbert Canyon Channel is approximately 16.6 cfs over 5.60 acres. See detention section

below for proposed 100-year detention in truck yard, which will restrict overall site discharge to Gabbert Canyon Channel to less than 5.4 cfs, or 90 percent of existing condition site runoff.

The site's southerly entry driveway fronting Los Angeles Avenue (Subarea 12E, 0.05 acre) will surface drain southerly to Los Angeles Avenue under proposed condition.

Tributary offsite flows previously mentioned in the Existing Condition section will be conveyed via proposed storm drains through the project site to Gabbert Canyon Channel under proposed condition, utilizing the same proposed channel connection as the aforementioned onsite flows. Northerly offsite flows from Subarea 21B (Q100=0.7 cfs) and Subareas 23D-25D (Q100=19.3 cfs) will be intercepted by a proposed large grate inlet adjacent to the site's northerly property line (south of existing railroad right-of-way), then conveyed southerly via a proposed 30" storm drain traversing through the site to the proposed connection to Gabbert Canyon Channel. Easterly offsite flows from Subarea 20C (Q100=2.9 cfs) will be intercepted by a proposed C.M.P. riser adjacent to the site's easterly property line, then conveyed southerly via a proposed 18" storm drain traversing through the site to the same proposed connection to Gabbert Canyon Channel.

See Appendix "B" for proposed condition hydrology calculations and Appendix "D" for proposed condition hydrology map. Please note that the minimum tributary area input allowed by Ventura County's Modified Rational Method Hydrology Program (VCRat v2.6) is 5.00 acres. For a tributary area less than 5 acres, calculations were performed at 5 acres, then Q100 was prorated down to the smaller tributary area. Also, the shortest time of concentration input allowed by VCRat is 6 minutes, and the longest Tc allowed is 30 minutes. For a tributary area with a Tc less than 6 minutes or more than 30 minutes, the Tc was increased to 6 minutes or reduced to 30 minutes as necessary.

Detention

Per Ventura County Watershed Protection District requirements, proposed condition discharge from the project site to Gabbert Canyon Channel is limited to 90 percent of existing condition site runoff (6.0 cfs x 0.90 = 5.4 cfs).

Proposed condition runoffs tributary to the westerly truck yard (Subareas 1A-5A, 3.90 acres, Q100=12.6 cfs) will be temporarily detained above the truck yard surface at a depth of 1.14 feet, with a volume of 15,970 cubic feet, with 1.2 cfs discharging via the proposed onsite storm drain to Gabbert Canyon Channel. Proposed condition runoffs from the remainder of the project site – 2.6 cfs from Subareas 6B-9B, 0.8 cfs from Subarea 10C, 0.6 cfs from Subarea 11D – will be allowed to discharge undetained. With truck yard detention, the proposed condition 100-year discharge from the project site to Gabbert Canyon Channel will be approximately 5.2 cfs, less than the allowable 5.4 cfs.

With adequate storage volume provided in the truck yard, proposed site improvements will not negatively impact any downstream drainage facilities. The proposed onsite storm

drain system will be appropriately sized during the site's final design phase to restrict proposed condition discharge to the rate described above.

Please note that the proposed Stormtech SC-740 underground chambers within the truck yard are only for B.M.P. treatment purposes, not for 100-year storm detention. Stormtech chambers will be completely filled with the required B.M.P. treatment volume prior to the higher storm's arrival. Proposed storm detention will occur above ground, above the truck yard surface.

See Appendix "C" for detention calculations.

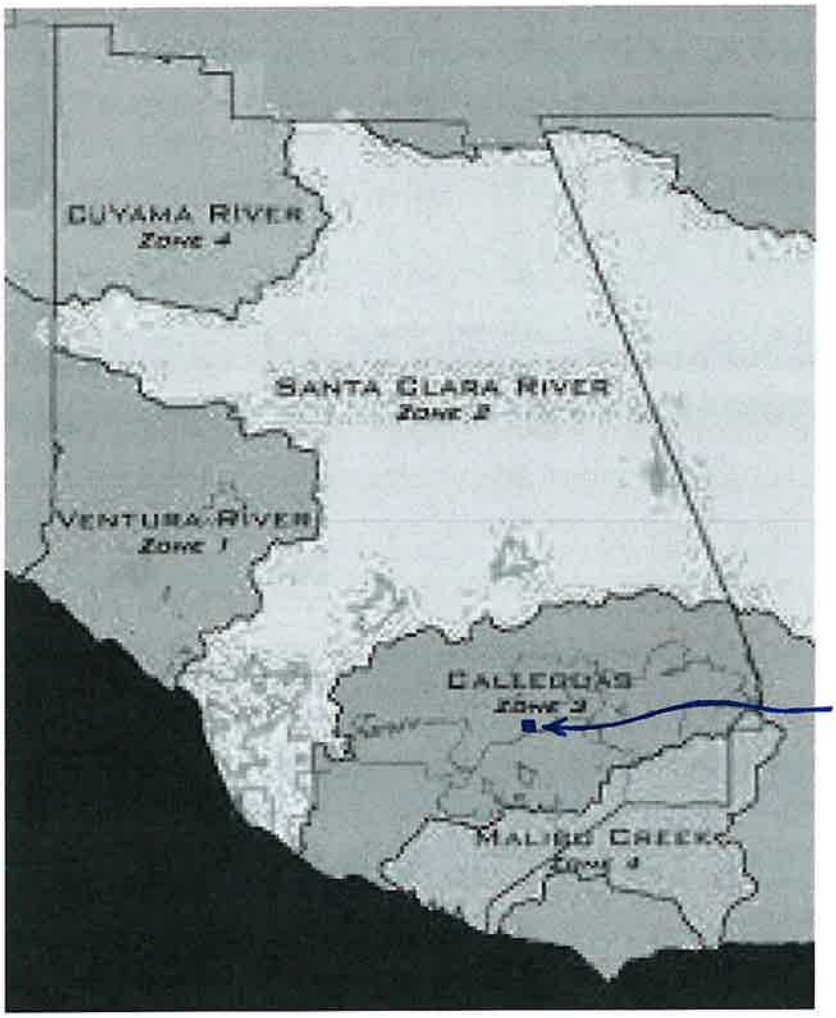
Methodology

Hydrology and detention calculations are computed using the Ventura County Watershed Protection District's Modified Rational Method Hydrology program (VCRat v2.6). Times of concentration are computed with the District's TC program (version 2.6.2009.7). The project site is in flood zone 3, rainfall zone J', with soil type 6 per the Ventura County Hydrology Manual. See Appendix "A" for pertinent reference materials.

APPENDIX	DESCRIPTION
A	REFERENCE MATERIALS
B	HYDROLOGY CALCULATIONS
C	DETENTION ANALYSIS
D	HYDROLOGY MAP

APPENDIX A

REFERENCE MATERIALS



FLOOD ZONE MAP

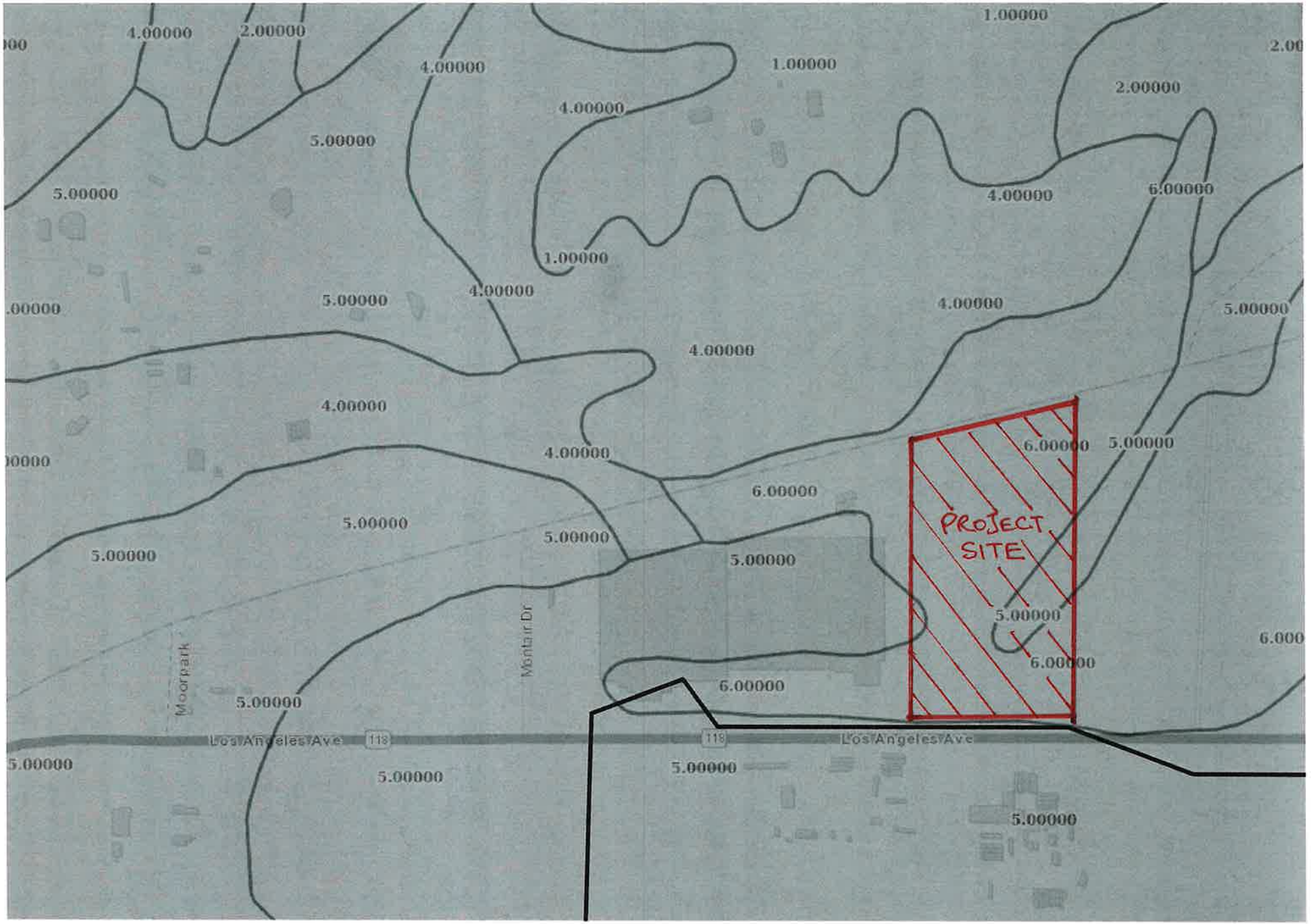
EXHIBIT 1A. LEGACY DESIGN STORM RAINFALL CONTOURS- 100-YR STORM



RAINFALL ZONE J'

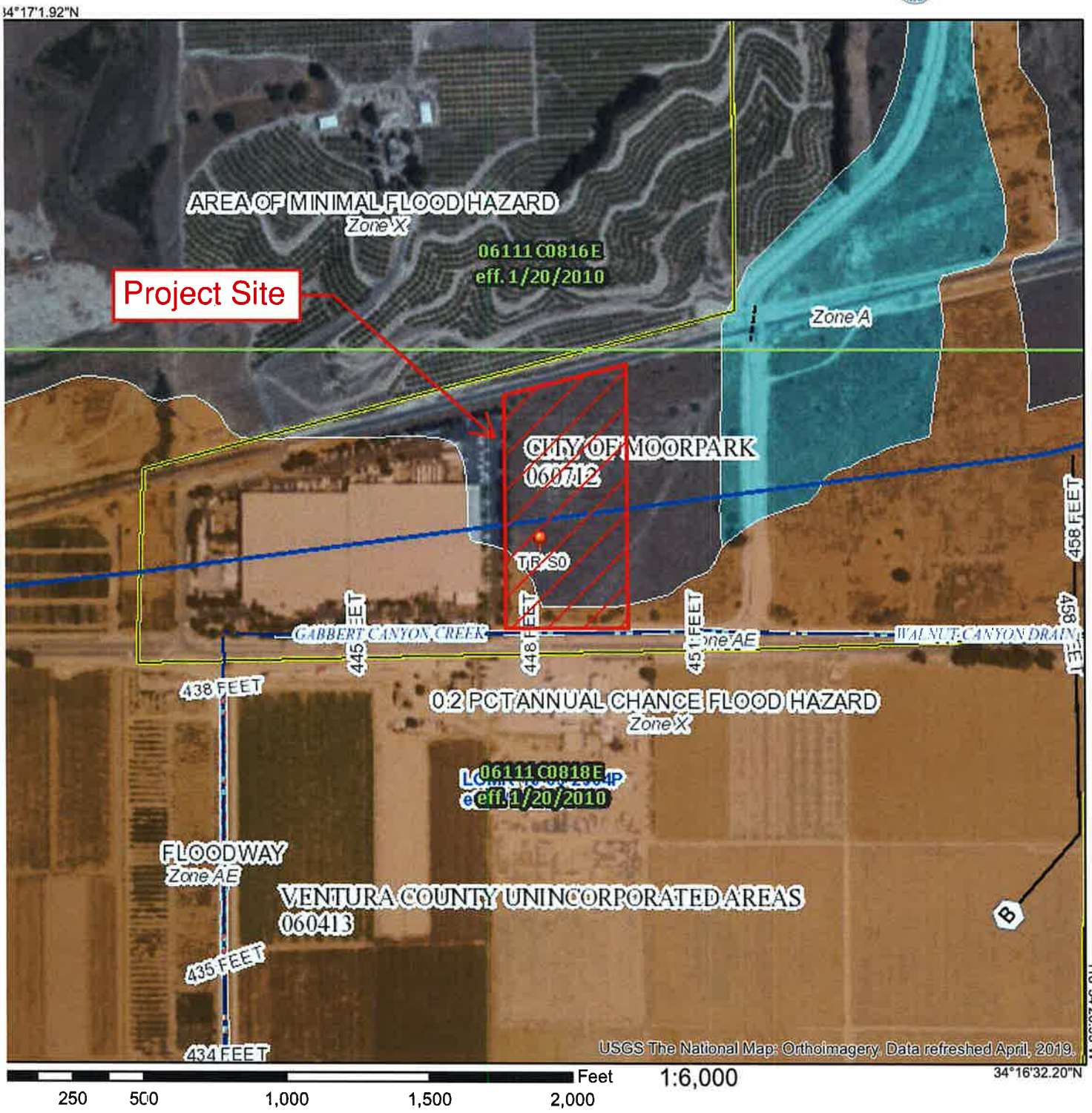
RAINFALL ZONE MAP

SOIL TYPE MAP



National Flood Hazard Layer FIRMette

FEMA



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Ar of 1% annual chance flood with avera depth less than one foot or with draina areas of less than one square mile *Zon*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Z*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chanc
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approxima point selected by the user and does not repre an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 5/4/2020 at 6:44:11 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations tables should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) zone 11. The **horizontal datum** was NAD 83, GRS80 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of **1988**. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

Spatial Reference System Division
National Geodetic Survey, NOAA
Silver Spring Metro Center
1315 East-West Highway
Silver Spring, Maryland 20910
(301) 713-3191

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit its website at http://www.ngs.noaa.gov.

Base map information shown on this FIRM was derived from U.S. Geological Survey Digital Orthophoto Quadrangles produced at a scale of 1:12,000 from photography dated 1994 or later.

This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at http://www.msc.fema.gov.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA MAP** (1-877-336-2827) or visit the FEMA website at http://www.fema.gov.



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

- A — A — Cross section line
- 23 — 23 — Transect line
- 87°07'45", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
- 3758000 FT — 1000-meter Universal Transverse Mercator grid values, zone 11
- 600000 FT — 5000-foot grid ticks: California State Plane coordinate system, zone V (FIPSZONE 0405), Lambert Conformal Conic projection
- DX5510 × — Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 — River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
January 20, 2010

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET
150 0 150 300 METERS

PANEL 0818E

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

VENTURA COUNTY, CALIFORNIA AND INCORPORATED AREAS

PANEL 818 OF 1275
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MOORPARK, CITY OF	060712	0818	E
VENTURA COUNTY	060413	0818	E

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER 06111C0818E

EFFECTIVE DATE JANUARY 20, 2010

Federal Emergency Management Agency

41-786

INDEX OF DRAWINGS

SHEET NO.	TITLE
1	PROJECT LOCATION MAP
2	PLAN, PROFILE & SECTIONS – STA. 0+00 TO STA. 8+00
3	PLAN, PROFILE & SECTIONS – STA. 8+00 TO STA. 18+00
4	PLAN, PROFILE & SECTION – STA. 18+00 TO STA. 28+00
5	PLAN, PROFILE & SECTIONS – STA. 28+00 TO STA. 36+00
6	PLAN, PROFILE & SECTIONS – STA. 36+00 TO STA. 46+00
7	PLAN, PROFILE & SECTIONS – STA. 46+00 TO STA. 50+00
8	PLAN, PROFILE & SECTIONS – STA. 50+00 TO END OF PROJECT
9	TRANSITIONS 1 & 2 – STA. 2+89.42 & STA. 32+61.06
10	TRANSITIONS 4 & 5 – STA. 50+20 & STA. 56+11.21
11	JUNCTION STRUCTURE – STA. 46+66.61
12	INLET STRUCTURE TO WALNUT CHANNEL & CHANNEL SECTIONS
13	CHANNEL SECTIONS ADJACENT TO BOX CULVERT – TRANSITION NO. 3
14	STILLING BASIN – STA. 2+35 – STRUCTURAL DETAILS.
15	STILLING BASIN – STEEL DETAILS
16	PIPE INLET STRUCTURES – LAYOUT & LOCATIONS
17	ACCESS ROAD BRIDGES – STRUCTURAL DETAILS
18	DETOUR & RESURFACING DETAILS – HIGHWAY 118
19	DOUBLE BOX CULVERT AT HIWAY CROSSING

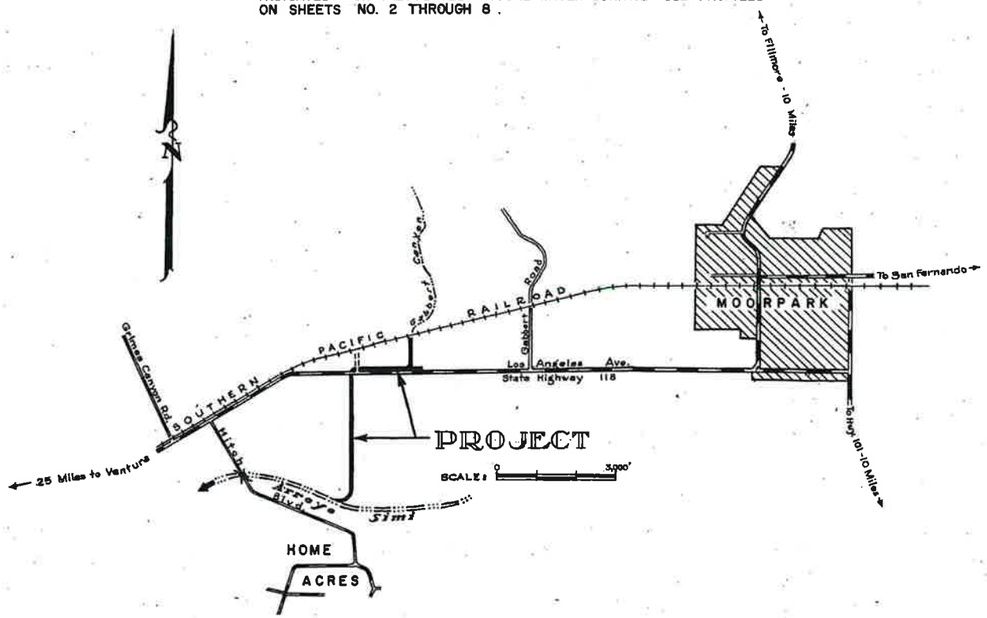
FOR GENERAL NOTES AND STRUCTURAL NOTES SEE SHEET NO. 16.

HYDRAULIC ELEMENTS

STATION	d_c ft.	d_n ft.	b.w. ft.	S.S.	n	S ft./ft.	V_n ft./sec.	Q c.f.s.
GABBERT CANYON SECTION								
0+00 TO 2+35	4.30	5.10	16	2:1	0.030	0.005	8.01	1070
3+14 TO 32+61	5.66	5.18	14	VERT.	0.014	0.0045	14.76	1070
35+17 TO 46+66	5.66	4.67	14	VERT.	0.014	0.006	16.37	1070
47+77 TO 50+20	6.00	4.15	8	VERT.	0.014	0.014	20.18	670
50+70 TO 56+11	4.50	2.73	8	1 1/2:1	0.015	0.0185	20.29	670
WALNUT CANYON SECTION								
0+40 TO 3+43	4.22	3.75	12	VERT.	0.014	0.005	13.11	590

NOTE: THESE ELEMENTS ARE CALCULATED AS FOR UNIFORM FLOW AT SLOPES INDICATED. FOR CALCULATED ACTUAL WATER SURFACE SEE PROFILES ON SHEETS NO. 2 THROUGH 8.

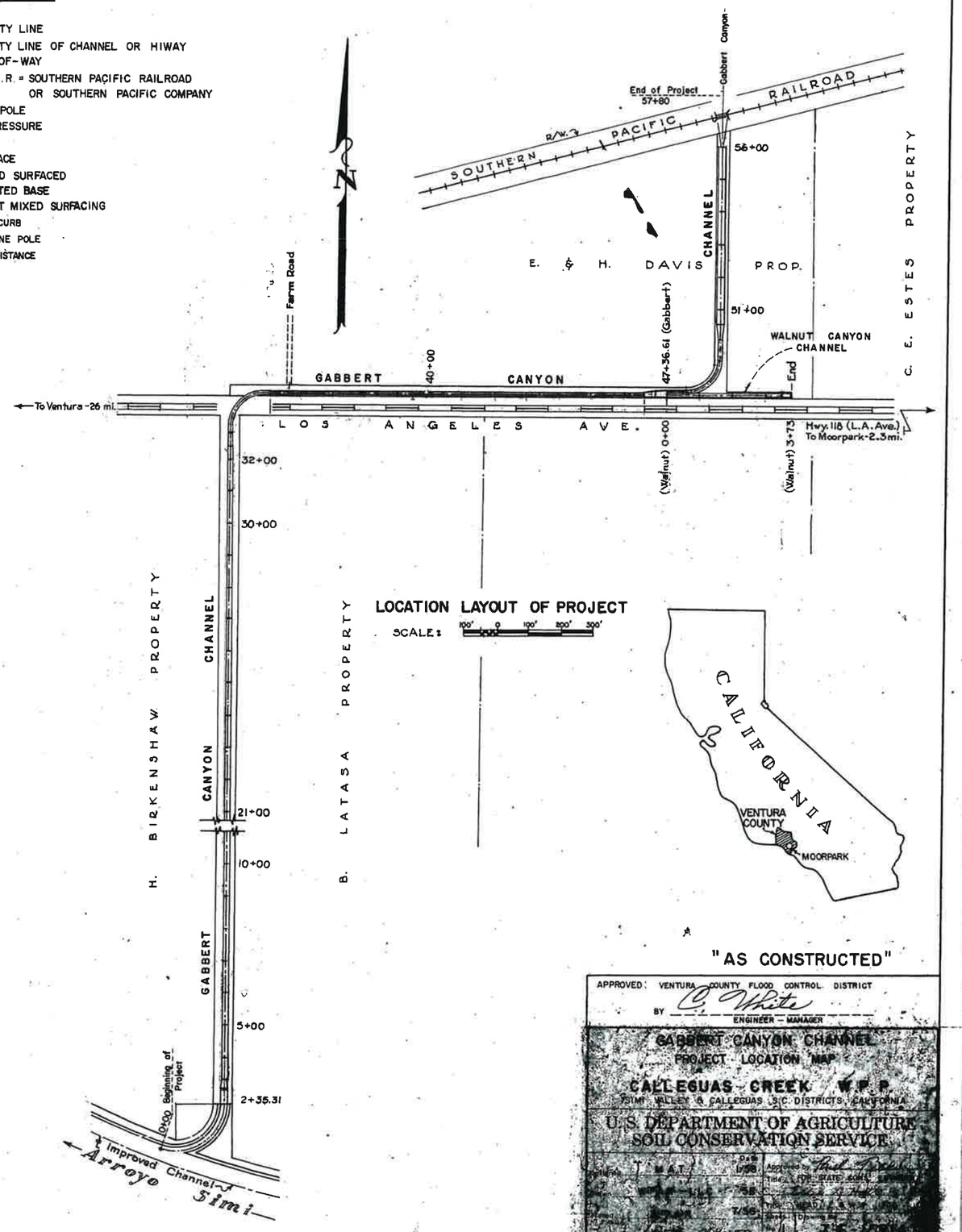
PROJECT SITE FROM 41+98 TO 45+47



LOCATION MAP

LEGEND

P/L = PROPERTY LINE
R/W = PROPERTY LINE OF CHANNEL OR HIWAY RIGHT-OF-WAY
S.P. OR S.P.R.R. = SOUTHERN PACIFIC RAILROAD OR SOUTHERN PACIFIC COMPANY
P.P. = POWER POLE
H.P. = HIGH PRESSURE
M = METER
C.F. = CURB FACE
F.S. = FINISHED SURFACED
U.B. = UNTREATED BASE
P.M.S. = PLANT MIXED SURFACING
T.C. = TOP OF CURB
T.P. = TELEPHONE POLE
CL. = CLEAR DISTANCE



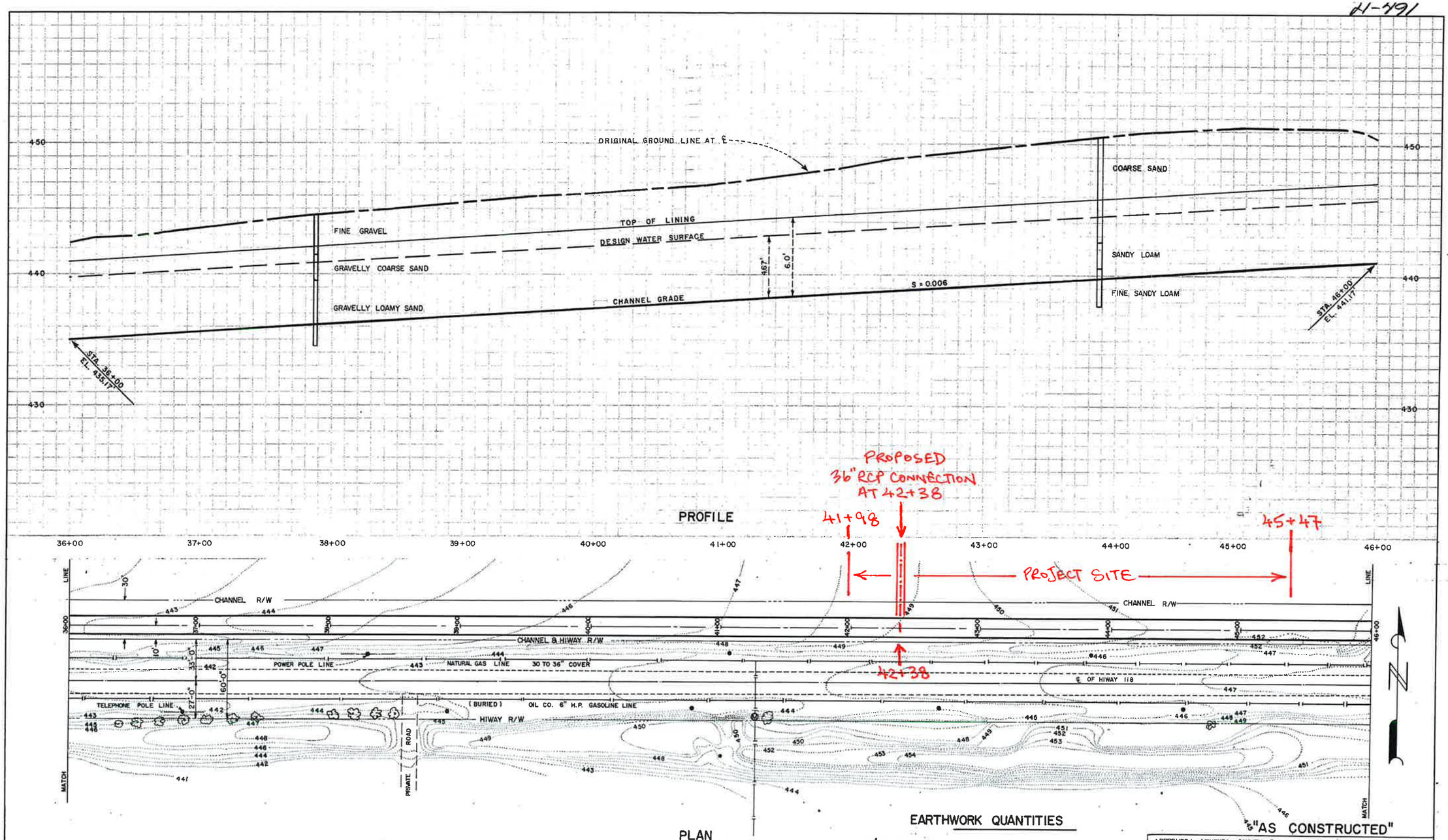
LOCATION LAYOUT OF PROJECT
SCALE: 100' 0 100' 200' 300'

"AS CONSTRUCTED"

APPROVED: VENTURA COUNTY FLOOD CONTROL DISTRICT
BY C. White
ENGINEER – MANAGER

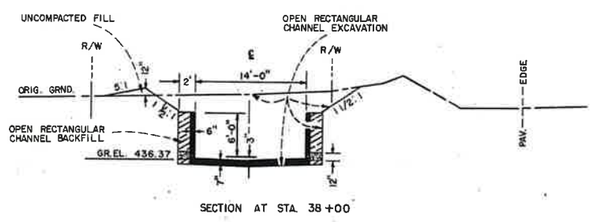
GABBERT CANYON CHANNEL
PROJECT LOCATION MAP
CALLEGUAS CREEK W.P.P.
SIMI VALLEY & CALLEGUAS S.C. DISTRICTS, CALIFORNIA
U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

41-491

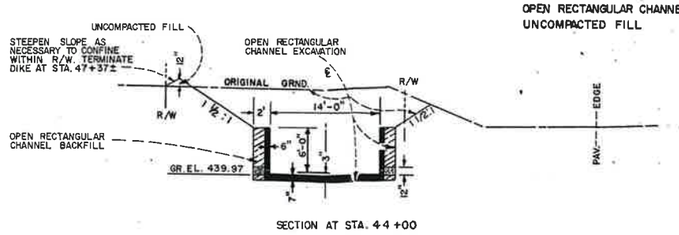


PROFILE

PLAN



SECTION AT STA. 38+00



SECTION AT STA. 44+00

EARTHWORK QUANTITIES

OPEN RECTANGULAR CHANNEL EXCAVATION	7,342 CU. YDS.
OPEN RECTANGULAR CHANNEL BACKFILL	593 CU. YDS.
UNCOMPACTED FILL	113 CU. YDS.

"AS CONSTRUCTED"

APPROVED: VENTURA COUNTY FLOOD CONTROL DISTRICT
BY C. White
ENGINEER - MANAGER

GABBERT CANYON-CHANNEL
PLAN, PROFILE & SECTIONS
STA. 36+00 TO STA. 46+00
CALLEGUAS CREEK W.P.P.
SIMI VALLEY & CALLEGUAS S.C. DISTRICTS, CALIFORNIA

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

		Date	
Designed	MAT	3/58	Approved by Paul Pickens
Drawn	LLC	4/58	Title for STATE CONSERVATION ENGINEER
Traced	LLC	6/58	Title HEAD, E & W. P. UNIT
Checked	CFB JKM	1/59	Sheet No. 6 Drawing No. 7-E-1551 4

PROJECT SITE

LOS ANGELES AVE

GABBERT CANYON CHANNEL

RANCHO LAS POSAS

RANCHO SIMI

MOORPARK MEMORIAL HIGH SCHOOL

MOUNTAIN MEADOWS SCHOOL

TIERRA

H-1	
H-2	H-3
H-4	H-5

LEGEND

DRAINAGE BASIN BOUNDARY
SUBAREA BOUNDARY
CITY BOUNDARY
DRAINAGE FLOWPATH

DRAINAGE SUBAREA IDENTIFICATION NUMBER (156B) WITH INDICATION OF AREA (69 ACRES) AND TIME OF CONCENTRATION (15 MINUTES-50 YEAR STORM). INDICATION OF DRAINAGE FLOWPATH JUNCTION OR HYDROGRAPH INPUT (K=1)

0 500 1000
SCALE IN FEET

HYDROLOGY MAP
CITY OF MOORPARK
MASTER PLAN OF DRAINAGE

HAWKS & ASSOCIATES, VENTURA

APRIL 1995 PLATE H-4

VENTURA COUNTY FLOOD CONTROL DISTRICT
MODIFIED RATIONAL METHOD HYDROLOGY

CITY OF MOORPARK 95MPD Q50 HAWKS/MR 3/29/95 mpkfinal.i50 STORM DAY 4

LOCATION	SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LNGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	RAIN ZONE	PCT IMPV
7414 500C	86.	184.	86.	184.	2	1950.	0.02600	0.00	0.00	0.	20	15	K50	0.05
7414 501C	88.	181.	174.	335.	0	0.	0.00000	0.00	0.00	0.	20	16	K50	0.05
7414 502D	0.	0.	0.	199.	0	0.	0.00000	0.00	0.00	0.	10	99	K50	0.00
7414 503D	0.	0.	0.	0.	0	0.	0.00000	0.00	0.00	0.	10	99	K50	0.00
7414 504D	0.	0.	0.	0.	0	0.	0.00000	0.00	0.00	0.	10	99	K50	0.00
7414 505D	80.	154.	80.	154.	3	1000.	0.03200	0.00	0.00	0.	30	16	K50	0.05
7414 506D	62.	83.	142.	225.	4	1400.	0.02300	4.00	0.00	0.	60	16	K50	0.05
7414 507D	52.	72.	194.	286.	4	2000.	0.02400	4.50	0.00	0.	60	15	K50	0.05
7414 508D	51.	74.	245.	341.	0	0.	0.00000	0.00	0.00	0.	60	14	K50	0.05
7414 509CD	245.	341.	419.	671.	1	2000.	0.02100	0.00	0.00	0.	10	0	K50	0.00
7414 510C	44.	86.	463.	662.	0	0.	0.00000	0.00	0.00	0.	40	14	K50	0.05
7414 511C	65.	158.	528.	769.	1	1950.	0.02870	0.00	0.00	0.	10	14	K50	0.05
7414 512C	86.	148.	614.	760.	1	1600.	0.02130	0.00	0.00	0.	50	15	K50	0.05
7414 513C	71.	152.	685.	750.	2	1250.	0.02400	0.00	0.00	0.	20	15	K50	0.05
7414 514C	26.	31.	711.	747.	1	2100.	0.01800	0.00	0.00	0.	70	10	K50	0.00
7414 515C	34.	85.	745.	728.	0	0.	0.00000	0.00	0.00	0.	20	11	K50	0.00
7414 516C	39.	101.	784.	740.	0	0.	0.00000	0.00	0.00	0.	10	12	K50	0.00
7414 517C	60.	42.	844.	740.	5	900.	0.01850	9.00	0.00	0.	70	16	K50	0.00
7414 518BC	844.	739.	2678.	3245.	5	1450.	0.00500	18.00	0.00	0.	10	0	K50	0.00
7414 519B	28.	75.	2706.	3250.	5	3300.	0.00900	17.00	0.00	0.	40	11	K50	0.70
7414 520B	0.	0.	2706.	3217.	0	0.	0.00000	0.00	0.00	0.	10	99	K50	0.00
7414 521AB	2706.	3217.	9253.	9927.	0	0.	0.00000	0.00	0.00	0.	10	0	K50	0.00
7414 522B	0.	0.	0.	3217.	0	0.	0.00000	0.00	0.00	0.	10	99	K50	0.00
7414 523B	0.	0.	0.	0.	0	0.	0.00000	0.00	0.00	0.	10	99	K50	0.00
7414 524B	0.	0.	0.	0.	0	0.	0.00000	0.00	0.00	0.	10	99	K50	0.00
7414 525B	0.	0.	0.	0.	0	0.	0.00000	0.00	0.00	0.	10	99	K50	0.00
7414 526B	0.	0.	0.	0.	0	0.	0.00000	0.00	0.00	0.	10	99	K50	0.00
7414 527B	0.	0.	0.	0.	0	0.	0.00000	0.00	0.00	0.	10	99	K50	0.00
7414 528B	0.	0.	0.	0.	0	0.	0.00000	0.00	0.00	0.	10	99	K50	0.00
7414 529B	0.	0.	0.	0.	0	0.	0.00000	0.00	0.00	0.	10	99	K50	0.00
7414 530B	38.	77.	38.	77.	3	750.	0.02670	0.00	0.00	0.	40	13	K50	0.03
7414 531B	70.	155.	108.	219.	4	1700.	0.02350	4.00	0.00	0.	20	14	K50	0.02
7414 532B	34.	70.	142.	276.	4	1200.	0.03330	4.00	0.00	0.	50	11	K50	0.02
7414 533B	71.	158.	213.	415.	4	1050.	0.02380	5.00	0.00	0.	20	14	K50	0.02
7414 534B	62.	132.	275.	530.	4	1400.	0.02360	5.50	0.00	0.	20	15	K50	0.01
7414 535B	35.	88.	310.	594.	0	0.	0.00000	0.00	0.00	0.	20	11	K50	0.03
7414 536C	0.	0.	0.	739.	0	0.	0.00000	0.00	0.00	0.	10	99	K50	0.00
7414 537C	0.	0.	0.	0.	0	0.	0.00000	0.00	0.00	0.	10	99	K50	0.00
7414 538C	0.	0.	0.	0.	0	0.	0.00000	0.00	0.00	0.	10	99	K50	0.00
7414 539C	0.	0.	0.	0.	0	0.	0.00000	0.00	0.00	0.	10	99	K50	0.00
7414 540C	41.	99.	41.	99.	3	1200.	0.04170	0.00	0.00	0.	20	12	K50	0.05
7414 541C	30.	76.	71.	160.	0	0.	0.00000	0.00	0.00	0.	20	11	K50	0.05
7414 542D	40.	96.	40.	96.	0	0.	0.00000	0.00	0.00	0.	20	12	K50	0.05
7414 543E	29.	79.	29.	79.	0	0.	0.00000	0.00	0.00	0.	10	11	K50	0.05

PROJECT SITE BETWEEN NODES 518BC AND 519B

Technical Addendum

Gabbert & Walnut Canyon Channels Flood Control Deficiency Study - Addendum

VENTURA COUNTY
WATERSHED PROTECTION DISTRICT
Planning & Regulatory Division
Advance Planning Section

July 2005

Revised:
August 2005

Prepared for:

Triliad Development Company
270 Conejo Ridge, Suite 200
Thousand Oaks, CA 91361

Prepared by:

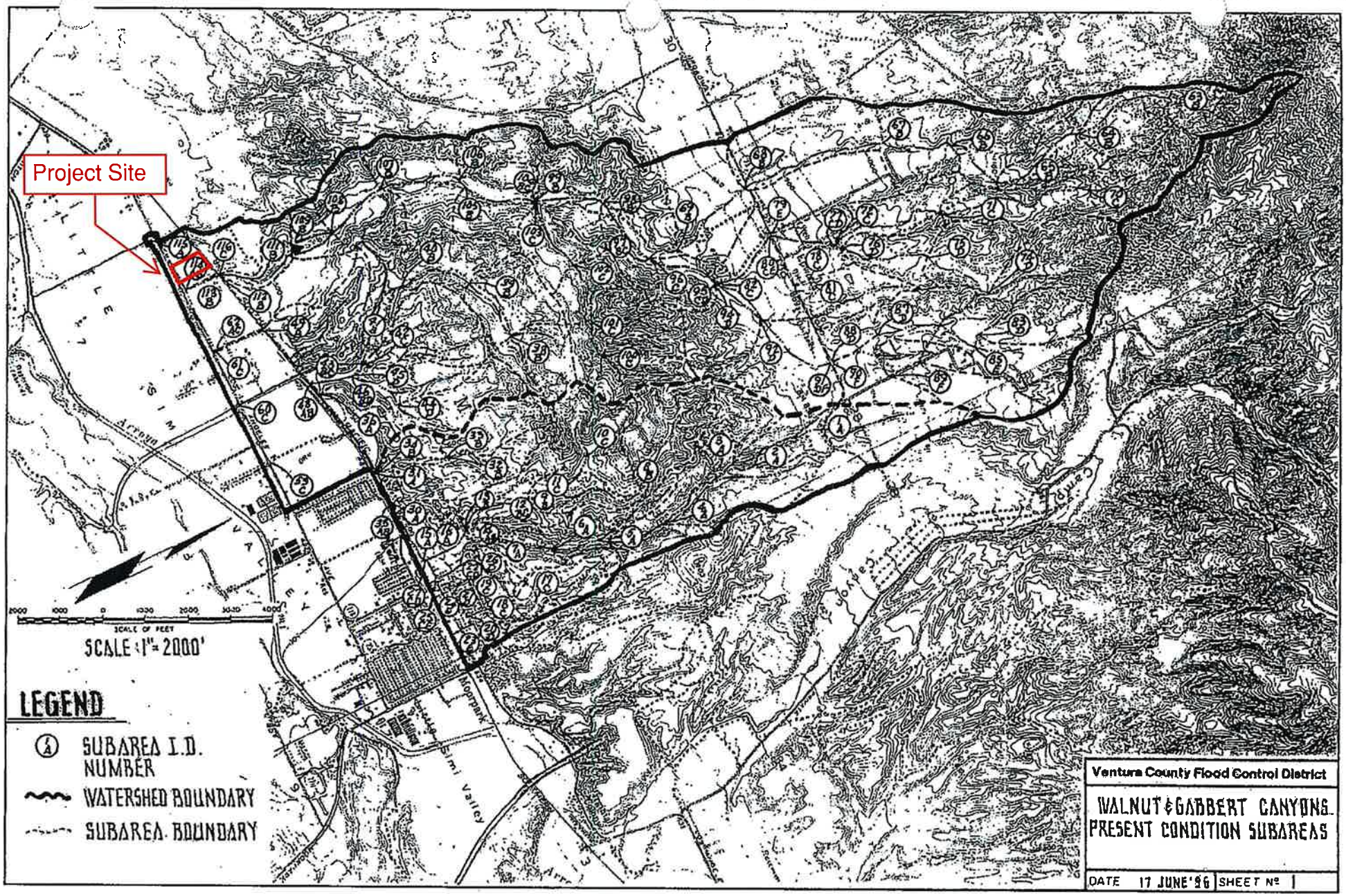
Pacific Advanced Civil Engineering, Inc. (PACE)
17520 Newhope Street, Suite 200
Fountain Valley, CA 92708



Contact:

Bruce M. Phillips, RCE 38635
Jonis C. Smith, RCE 58654

PACE JN #7753E



Regional Watershed Exhibit

Gabbert and Walnut Canyon Channels

Application of the Ventura County Modified Rational watershed model for the current landuse (baseline watershed) conditions was evaluated for both the 50-year and 100-year return periods. The hydrograph peak discharges associated with critical concentration points along the channel system are indicated in *Table No. 4 - Summary of Existing Watershed Hydrology - Clearwater Design Flowrates*. The detailed input and output for the watershed models are contained in the *Technical Appendix*. All discharges generated from the VCFCD baseline watershed model reflect clearwater values. Runoff conveying debris and sediment has an increased total volume which tends to increase or "bulk" the apparent clearwater flowrate. However, it is assumed that the potential for debris production will be reduced through future development and debris collection facilities and no "bulking factor" was applied to the discharges.

PROJECT SITE BETWEEN NODES 114AB AND 115A

Table No. 4. 3- Summary of Existing Watershed Hydrology
Clearwater Design Flowrates

Channel	Watershed Model Node	Drainage Area (acres)	Design Clearwater Flow		Channel Reach Description
			Q_{50}	Q_{100}	
Gabbert	109B	2,433	1,732 cfs	**2,185 cfs**	Gabbert Debris Basin spillway
Gabbert	114AB	4,365	2,275 cfs	**2,944 cfs**	Downstream of Walnut Canyon confluence
Gabbert	115A	4,388	2,276 cfs	**2,945 cfs**	Los Angeles Avenue Culvert crossing
Gabbert	118AC	4,425	2,279 cfs	**2,947 cfs**	Outlet to the Arroyo Simi
Walnut	6A	382	283 cfs	**382 cfs**	Existing improved channel headworks next to Walnut Canyon Road
Walnut	7A	433	292 cfs	**431 cfs**	Upstream Casey Road culvert
Walnut	14AB	709	469 cfs	**696 cfs**	Confluence at Casey Road culvert with small offsite canyon area
Walnut	28AC	846	603 cfs	**889 cfs**	Downstream of confluence at High Street Drain with Moorpark Drain No. 1
Walnut	35AB	1,044	797 cfs	**1,149 cfs**	Downstream of confluence at Poindexter culvert crossing
Walnut	48AB	1,553	1,123 cfs	**1,619 cfs**	Downstream of confluence at Gabbert Canyon Road
Walnut	49A	1,623	1,176 cfs	**1,688 cfs**	Southern Pacific Railroad culvert crossing
Walnut	62AC	1,794	1,258 cfs	**1,810 cfs**	Downstream of confluence with 54" dia. Los Angeles Avenue city storm drain

Angie Maldonado

From: Bandurraga, Mark <Mark.Bandurraga@ventura.org>
Sent: Tuesday, May 5, 2020 3:28 PM
To: Angie Maldonado
Cc: Marotto, Ron; PWA HydroData; Sheppard, Tony
Subject: Request for Gabbert Channel Hydrology
Attachments: GabbertProjectMap.jpg; Gabbert-WalnutCynChnls-FloodCtrlDeficStudy-2005.pdf

Angie:
I don't know if you know the history behind all of the studies in the area. You can confirm this with the City, but I believe they have an old MDP that probably is not current for this area.
In 1997 RBF did a Regional Study of the Walnut Gabbert channel and selected some alternatives to fix the deficiencies in the channel.
We have a hydrology study from 2003 that provides hydrology but it is not suitable for design because it has not been updated to reflect current conditions.
In 2005 the 1997 study author had moved to PACE and updated the study based on projects that had been constructed since 1997 and some that were proposed at that time. It selected different alternatives to fix the deficiencies.
Recently a developer did an extensive drainage study for the Hitch Ranch development upstream. We reviewed this study as part of our process but I will have to check to see if it is public info that we can give to you. You could also request it through the City if you are in contact with them.
I am attaching the 2005 study because it gives you some excellent background on the area and the suggested alternatives.
When we do CEQA reviews on Walnut Gabbert projects, one of the conditions we apply to projects is that the proposed condition runoff can only be 90% of the undeveloped condition runoff per the 2005 report that was adopted by the City.

Let me know if need additional info or clarification on any of this.

Our normal data request email is hydrodata@ventura.org if you want to use it in the future.

Mark Bandurraga
Engineer IV (Design Hydrology)
Watershed Protection District

PUBLIC VENTURA COUNTY WORKS
800 S. Victoria Ave. / #1600
Ventura, CA 93009
P: 805.654. 2015

****
NEW on District Webpages:
2017 Hydrology Manual and VCRat2.64 Program
Tc Calculator Using Excel
VCRat Calcs for 1 Subarea + Routing Using Excel
****

APPENDIX B

HYDROLOGY CALCULATIONS

EXISTING CONDITION

VENTURA COUNTY WATERSHED PROTECTION DISTRICT
TIME OF CONCENTRATION
TC Program Version: 2.6.2009.7
Project: PentAir, Moorpark
Date: 12:00:00 AM
Engineer: Ricky Hwa
Consultant: Thienes Engineering

S U M M A R Y O F C O M P U T A T I O N S

Watershed Name: Existing 100-Year

Name	Zone	Storm	Soil	Area (acres)	TC (min)
SubArea 20A	J'	100	6.00	5.7 / 6	17.254 / 17
SubArea 21B	J'	100	6.00	0.4 / 0	6.559 / 7
SubArea 22C	J'	100	6.00	2.6 / 3	16.243 / 16
SubArea 23D	J'	100	6.00	26.3 / 26	TC ERROR

♠

Watershed Name: Existing 100-Year

Sub-Area Name: SubArea 20A
Tc: 17.254 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 17.254 min. = 17 min.

SUB AREA INPUT DATA

Sub Area Name: SubArea 20A
Total Area (ac): 5.65
Flood Zone: 3
Rainfall Zone: J'
Storm Frequency (years): 100
Development Type: Undeveloped
Soil Type: 6.00
Percent Impervious: 0
SUB AREA OUTPUT

Intensity (in/hr): 2.224
C Total: 0.475
Sum Q Segments (cfs): 5.97
Q Total (cfs): 5.97
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 1,035.25
Time of Concentration (min): 17.254

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath 20A
FLOW PATH TRAVEL TIME (min): 17.2542
Flow Type: Overland
Length (ft): 840
Top Elevation (ft): 457.5
Bottom Elevation (ft): 444.5
Contributing Area (acres): 5.65
Percent of Sub-Area (%): 100.0
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0155
Effective Slope: 0.0155
Q for Flow Path (cfs): 5.97
Avg Velocity (ft/s): 0.81
Passed Scour Check: YES
Scour Velocity (ft/sec): 0.87

♠

Project: PentAir, Moorpark
Date: 12:00:00 AM
Engineer: Ricky Hwa
Consultant: Thienes Engineering

Sub-Area Name: SubArea 21B
Tc: 6.559 Minutes

DATA FOR SUB AREA 2

SUB AREA TIME OF CONCENTRATION: 6.559 min. = 7 min.

SUB AREA INPUT DATA

Sub Area Name: SubArea 21B
Total Area (ac): 0.4
Flood Zone: 3
Rainfall Zone: J'
Storm Frequency (years): 100
Development Type: Undeveloped
Soil Type: 6.00
Percent Impervious: 0
SUB AREA OUTPUT

Intensity (in/hr): 3.189
C Total: 0.539
Sum Q Segments (cfs): 0.69
Q Total (cfs): 0.69
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 393.52
Time of Concentration (min): 6.559

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath 21B
FLOW PATH TRAVEL TIME (min): 6.5586
Flow Type: Overland
Length (ft): 350
Top Elevation (ft): 467.9
Bottom Elevation (ft): 452.2
Contributing Area (acres): 0.4
Percent of Sub-Area (%): 100.0
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0449
Effective Slope: 0.0449
Q for Flow Path (cfs): 0.69
Avg Velocity (ft/s): 0.89
Passed Scour Check: YES
Scour Velocity (ft/sec): 2.93
↟
Project: PentAir, Moorpark
Date: 12:00:00 AM
Engineer: Ricky Hwa
Consultant: Thienes Engineering

Sub-Area Name: SubArea 22C
Tc: 16.243 Minutes
DATA FOR SUB AREA 3

SUB AREA TIME OF CONCENTRATION: 16.243 min. = 16 min.

SUB AREA INPUT DATA

Sub Area Name: SubArea 22C
Total Area (ac): 2.6
Flood Zone: 3
Rainfall Zone: J'
Storm Frequency (years): 100
Development Type: Undeveloped
Soil Type: 6.00
Percent Impervious: 0
SUB AREA OUTPUT

Intensity (in/hr): 2.288
C Total: 0.480
Sum Q Segments (cfs): 2.86
Q Total (cfs): 2.86
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 974.58
Time of Concentration (min): 16.243

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath 22C
FLOW PATH TRAVEL TIME (min): 16.2429
Flow Type: Overland
Length (ft): 800
Top Elevation (ft): 470.2
Bottom Elevation (ft): 454
Contributing Area (acres): 2.6
Percent of Sub-Area (%): 100.0
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0203
Effective Slope: 0.0203
Q for Flow Path (cfs): 2.86
Avg Velocity (ft/s): 0.82
Passed Scour Check: YES
Scour Velocity (ft/sec): 2.62
♠
Project: PentAir, Moorpark
Date: 12:00:00 AM
Engineer: Ricky Hwa
Consultant: Thienes Engineering

Sub-Area Name: SubArea 23D
Tc: 34.854 Minutes
DATA FOR SUB AREA 4

SUB AREA TIME OF CONCENTRATION: 34.854 min. = 35 min.

SUB AREA INPUT DATA

Sub Area Name: SubArea 23D
Total Area (ac): 26.3
Flood Zone: 3
Rainfall Zone: J'
Storm Frequency (years): 100
Development Type: Undeveloped
Soil Type: 6.00
Percent Impervious: 0
SUB AREA OUTPUT

Intensity (in/hr): 1.610
C Total: 0.401
Sum Q Segments (cfs): 16.97
Q Total (cfs): 16.97
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 2,091.24
Time of Concentration (min): 34.854

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath 23D
FLOW PATH TRAVEL TIME (min): 15.9026
Flow Type: Overland
Length (ft): 940
Top Elevation (ft): 605
Bottom Elevation (ft): 540
Contributing Area (acres): 6.35
Percent of Sub-Area (%): 24.1
Overland Type: Mountain
Development Type: Undeveloped
Map Slope: 0.0691
Effective Slope: 0.0691
Q for Flow Path (cfs): 4.10
Avg Velocity (ft/s): 0.99
Passed Scour Check: YES
Scour Velocity (ft/sec): 2.37

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath 24D
FLOW PATH TRAVEL TIME (min): 8.0647
Flow Type: Overland
Length (ft): 615
Top Elevation (ft): 540

Bottom Elevation (ft): 464
Contributing Area (acres): 11.1
Percent of Sub-Area (%): 42.2
Overland Type: Mountain
Development Type: Undeveloped
Map Slope: 0.1236
Effective Slope: 0.1141
Q for Flow Path (cfs): 7.16
Avg Velocity (ft/s): 1.27
Passed Scour Check: YES
Scour Velocity (ft/sec): 3.67

DATA FOR FLOW PATH 3

Flow Path Name: FlowPath 25D
FLOW PATH TRAVEL TIME (min): 10.8867
Flow Type: Overland
Length (ft): 530
Top Elevation (ft): 464
Bottom Elevation (ft): 455.8
Contributing Area (acres): 8.85
Percent of Sub-Area (%): 33.7
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0155
Effective Slope: 0.0155
Q for Flow Path (cfs): 5.71
Avg Velocity (ft/s): 0.81
Passed Scour Check: YES
Scour Velocity (ft/sec): 2.72

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Modified Rational Model Results Report

Job: 3885 Project: PentAir, Moorpark

Project Description

JOB #3885 PENTAIR, MOORPARK
SUBAREA 20A - PROJECT SITE AREA 5.65 AC

VCRat version: 2.6.2009.7
VCRain version: 200703
DOS EXE version: PC 2.2-200809

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 3885 Project: PentAir, Moorpark

Page: 2

Model Results

NODE ID	SOIL TYPE	RAIN ZONE	TC (MIN)	% IMP	AREA (AC)	FLOW (CFS)	ACCUMULATED AREA (AC)	ACCUMULATED FLOW (CFS)	TIME (MIN)	CHANNEL TYPE	LENGTH (FT)	SLOPE (FT/FT)	SIZE (FT)	H:V (Z)	N CHNL VALUES	VEL (FT/S)	DEPTH (FT)	SIDES
1A : SUBAREA 20A																		
1A	060	J'100	17	0	6	6	6	6	1155	-------	----	-------	---	----	-----	-----	--	--
2A : SUBAREA 20A																		
2A : Clearing Hydrograph Bank: A																		
2A	060	J'100	17	0	6	6	6	6	1155	-------	----	-------	---	----	-----	-----	--	--

FROM TC CALCULATOR

Issue/Warning Messages

TYPE	ERR NO	PROCEDURE	LOCATION	MESSAGE

NO ISSUES OR WARNINGS DETECTED

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 3885 Project: PentAir, Moorpark

Page: 3

Hydrograph Printouts

HYDROGRAPH PRINTOUT AT: 2A

DESCRIPTION: SUBAREA 20A
2A : Clearing Hydrograph Bank: A

TOTAL AREA TO HYDROGRAPH:	6	acres
HYDROGRAPH PEAK:	6	cfs
TIME OF PEAK:	1155	minutes
HYDROGRAPH VOLUME:	0.18	acre-ft

TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)
0	0.00	100	0.00	200	0.00	300	0.00	400	0.00
500	0.00	600	0.00	700	0.00	800	0.00	900	0.00
1000	0.00	1050	0.00	1100	0.00	1110	0.00	1120	0.01
1130	0.01	1131	0.01	1132	0.01	1133	0.01	1134	0.01
1135	0.01	1136	0.10	1137	0.34	1138	0.62	1139	0.96
1140	1.15	1141	1.41	1142	1.68	1143	1.92	1144	2.19
1145	2.49	1146	2.77	1147	3.06	1148	3.25	1149	3.11
1150	2.98	1151	3.56	1152	5.52	1153	6.08	1154	6.27
1155	6.35	1156	6.31	1157	6.27	1158	6.20	1159	6.01
1160	5.89	1161	5.72	1162	5.48	1163	5.19	1164	4.92
1165	4.64	1166	4.65	1167	4.65	1168	3.95	1169	1.46
1170	0.10	1171	0.01	1172	0.01	1173	0.00	1174	0.00
1175	0.00	1176	0.00	1177	0.00	1178	0.00	1179	0.00
1180	0.00	1181	0.00	1182	0.00	1183	0.00	1184	0.00
1185	0.00	1186	0.00	1187	0.00	1188	0.00	1189	0.00
1190	0.00	1191	0.00	1192	0.00	1193	0.00	1194	0.00
1195	0.00	1196	0.00	1197	0.00	1198	0.00	1199	0.00
1200	0.00	1201	0.00	1202	0.00	1203	0.00	1204	0.00
1205	0.00	1206	0.00	1207	0.00	1208	0.00	1209	0.00
1210	0.00	1211	0.00	1212	0.00	1213	0.00	1214	0.00
1215	0.00	1216	0.00	1217	0.00	1218	0.00	1219	0.00
1220	0.00	1221	0.00	1222	0.00	1223	0.00	1224	0.00
1225	0.00	1226	0.00	1227	0.00	1228	0.00	1229	0.00
1230	0.00	1231	0.00	1232	0.00	1233	0.00	1234	0.00
1235	0.00	1236	0.00	1237	0.00	1238	0.00	1239	0.00
1240	0.00	1241	0.00	1242	0.00	1243	0.00	1244	0.00
1245	0.00	1246	0.00	1247	0.00	1248	0.00	1249	0.00
1250	0.00	1251	0.00	1252	0.00	1253	0.00	1254	0.00
1255	0.00	1256	0.00	1257	0.00	1258	0.00	1259	0.00
1260	0.00	1261	0.00	1262	0.00	1263	0.00	1264	0.00
1265	0.00	1266	0.00	1267	0.00	1268	0.00	1269	0.00
1270	0.00	1271	0.00	1272	0.00	1273	0.00	1274	0.00
1275	0.00	1276	0.00	1277	0.00	1278	0.00	1279	0.00
1280	0.00	1281	0.00	1282	0.00	1283	0.00	1284	0.00
1285	0.00	1286	0.00	1287	0.00	1288	0.00	1289	0.00
1290	0.00	1291	0.00	1292	0.00	1293	0.00	1294	0.00
1295	0.00	1296	0.00	1297	0.00	1298	0.00	1299	0.00
1300	0.00	1310	0.00	1320	0.00	1330	0.00	1340	0.00
1350	0.00	1360	0.00	1370	0.00	1380	0.00	1390	0.00
1400	0.00	1420	0.00	1440	0.00	1460	0.00	1500	0.00

← PEAK Q_{100} AT 1155 min:
6.35 CFS / 6.00 AC.

PRORATED FOR 5.65 AC.:
$= 6.35 \text{ CFS} \times \frac{5.65 \text{ AC}}{6.00 \text{ AC}}$
$= 6.0 \text{ CFS}$

ALLOWABLE DISCHARGE FROM PROJECT SITE:
$6.0 \text{ CFS} \times 0.90$
$= 5.4 \text{ CFS}$

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 3885 Project: PentAir, Moorpark

Page: 4

VCRat Model Input

Model Lines

```
005  3885  001A Header place holder
005  3885  002A Header place holder
999
999
006  3885  001A 060000000617A97                          G1
006  3885  002A 060000000617A97                        1 A2
999
```

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Modified Rational Model Results Report

Job: 1 Project: PentAir, Moorpark

Project Description

JOB #3885 PENTAIR, MOORPARK
SUBAREA 21B - OFFSITE TRIBUTARY AREA 0.40AC

VCRat version: 2.6.2009.7
VCRain version: 200703
DOS EXE version: PC 2.2-200809

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 1 Project: PentAir, Moorpark

Model Results

NODE ID	SOIL TYPE	RAIN ZONE	TC (MIN)	% IMP	AREA (AC)	FLOW (CFS)	AREA (AC)	FLOW (CFS)	TIME (MIN)	CHANNEL TYPE	LENGTH (FT)	SLOPE (FT/FT)	SIZE (FT)	H:V (Z)	N CHNL VALUES	VEL (FT/S)	DEPTH (FT)
1B : SUBAREA 21B																	
1B	060	J'100	7	0	5	9	5	9	1157	-------	----	-------	---	----	-----	-----	--
2B : SUBAREA 21B																	
2B : Clearing Hydrograph Bank: B																	
2B	060	J'100	7	0	5	9	5	9	1157	-------	----	-------	---	----	-----	-----	--

FROM TC CALCULATOR

5 AC MINIMUM AREA INPUT ALLOWED BY VCRAT CALCULATOR, TO BE PRORATED FOR 0.40 AC

Issue/Warning Messages

TYPE	ERR NO	PROCEDURE	LOCATION	MESSAGE

NO ISSUES OR WARNINGS DETECTED

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 1 Project: PentAir, Moorpark

Hydrograph Printouts

HYDROGRAPH PRINTOUT AT: 2B

DESCRIPTION: SUBAREA 21B
2B : Clearing Hydrograph Bank: B
TOTAL AREA TO HYDROGRAPH: 5 acres
HYDROGRAPH PEAK: 9 cfs
TIME OF PEAK: 1157 minutes
HYDROGRAPH VOLUME: 0.15 acre-ft

TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)
0	0.00	100	0.00	200	0.00	300	0.00	400	0.00
500	0.00	600	0.00	700	0.00	800	0.00	900	0.00
1000	0.00	1050	0.00	1100	0.00	1110	0.00	1120	0.00
1130	0.00	1131	0.00	1132	0.00	1133	0.30	1134	0.91
1135	1.22	1136	1.53	1137	1.82	1138	1.78	1139	1.78
1140	1.82	1141	1.98	1142	2.13	1143	2.27	1144	2.45
1145	2.85	1146	3.19	1147	3.56	1148	3.79	1149	3.36
1150	2.94	1151	3.93	1152	7.60	1153	8.44	1154	8.44
1155	8.20	1156	8.41	1157	8.63	1158	7.39	1159	3.14
1160	1.86	1161	1.04	1162	0.40	1163	0.00	1164	0.00
1165	0.00	1166	0.00	1167	0.00	1168	0.00	1169	0.00
1170	0.00	1171	0.00	1172	0.00	1173	0.00	1174	0.00
1175	0.00	1176	0.00	1177	0.00	1178	0.00	1179	0.00
1180	0.00	1181	0.00	1182	0.00	1183	0.00	1184	0.00
1185	0.00	1186	0.00	1187	0.00	1188	0.00	1189	0.00
1190	0.00	1191	0.00	1192	0.00	1193	0.00	1194	0.00
1195	0.00	1196	0.00	1197	0.00	1198	0.00	1199	0.00
1200	0.00	1201	0.00	1202	0.00	1203	0.00	1204	0.00
1205	0.00	1206	0.00	1207	0.00	1208	0.00	1209	0.00
1210	0.00	1211	0.00	1212	0.00	1213	0.00	1214	0.00
1215	0.00	1216	0.00	1217	0.00	1218	0.00	1219	0.00
1220	0.00	1221	0.00	1222	0.00	1223	0.00	1224	0.00
1225	0.00	1226	0.00	1227	0.00	1228	0.00	1229	0.00
1230	0.00	1231	0.00	1232	0.00	1233	0.00	1234	0.00
1235	0.00	1236	0.00	1237	0.00	1238	0.00	1239	0.00
1240	0.00	1241	0.00	1242	0.00	1243	0.00	1244	0.00
1245	0.00	1246	0.00	1247	0.00	1248	0.00	1249	0.00
1250	0.00	1251	0.00	1252	0.00	1253	0.00	1254	0.00
1255	0.00	1256	0.00	1257	0.00	1258	0.00	1259	0.00
1260	0.00	1261	0.00	1262	0.00	1263	0.00	1264	0.00
1265	0.00	1266	0.00	1267	0.00	1268	0.00	1269	0.00
1270	0.00	1271	0.00	1272	0.00	1273	0.00	1274	0.00
1275	0.00	1276	0.00	1277	0.00	1278	0.00	1279	0.00
1280	0.00	1281	0.00	1282	0.00	1283	0.00	1284	0.00
1285	0.00	1286	0.00	1287	0.00	1288	0.00	1289	0.00
1290	0.00	1291	0.00	1292	0.00	1293	0.00	1294	0.00
1295	0.00	1296	0.00	1297	0.00	1298	0.00	1299	0.00
1300	0.00	1310	0.00	1320	0.00	1330	0.00	1340	0.00
1350	0.00	1360	0.00	1370	0.00	1380	0.00	1390	0.00
1400	0.00	1420	0.00	1440	0.00	1460	0.00	1500	0.00

← PEAK Q100 AT 1157 MIN:
8.63 CFS / 5.00 AC

PRORATED FOR 0.40 AC:
= 8.63 CFS × 0.40 AC / 5.00 AC.
= 0.7 CFS

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 1 Project: PentAir, Moorpark

VCRat Model Input

Model Lines

```
005     1  001B Header place holder
005     1  002B Header place holder
999
999
006     1  001B 060000000507A97                          G1
006     1  002B 060000000507A97                        1 B2
999
```

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Modified Rational Model Results Report

Job: 1 Project: PentAir, Moorpark

Project Description

JOB #3885 PENTAIR, MOORPARK
SUBAREA 22C – OFFSITE TRIBUTARY AREA 2.60 AC

VCRat version: 2.6.2009.7
VCRain version: 200703
DOS EXE version: PC 2.2-200809

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 1 Project: PentAir, Moorpark

Page: 2

Model Results

NODE ID	SOIL TYPE	RAIN ZONE	TC (MIN)	% IMP	AREA (AC)	FLOW (CFS)	AREA (AC)	FLOW (CFS)	TIME (MIN)	CHANNEL TYPE	LENGTH (FT)	SLOPE (FT/FT)	SIZE (FT)	H:V (Z)	N CHNL VALUES	VEL (FT/S)	DEPTH (FT)	SIDES
1C : SUBAREA 22C																		
1C 060	J'100	16	0	5	6	5	6	1155	-------	----	-------	---	----	-----	-----	--	--	
2C : SUBAREA 22C																		
2C : Clearing Hydrograph Bank: C																		
2C 060	J'100	16	0	5	6	5	6	1155	-------	----	-------	---	----	-----	-----	--	--	

FROM TC CALCULATOR

5 AC MINIMUM AREA INPUT ALLOWED BY VCRAT CALCULATOR, TO BE PRORATED FOR 2.60 AC

Issue/Warning Messages

TYPE	ERR NO	PROCEDURE	LOCATION	MESSAGE

NO ISSUES OR WARNINGS DETECTED

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 1 Project: PentAir, Moorpark

Page: 3

Hydrograph Printouts

HYDROGRAPH PRINTOUT AT: 2C

DESCRIPTION: SUBAREA 22C
2C : Clearing Hydrograph Bank: C
TOTAL AREA TO HYDROGRAPH: 5 acres
HYDROGRAPH PEAK: 6 cfs
TIME OF PEAK: 1155 minutes
HYDROGRAPH VOLUME: 0.15 acre-ft

TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)
0	0.00	100	0.00	200	0.00	300	0.00	400	0.00
500	0.00	600	0.00	700	0.00	800	0.00	900	0.00
1000	0.00	1050	0.00	1100	0.00	1110	0.00	1120	0.00
1130	0.00	1131	0.00	1132	0.00	1133	0.00	1134	0.00
1135	0.00	1136	0.10	1137	0.40	1138	0.65	1139	0.90
1140	1.03	1141	1.27	1142	1.50	1143	1.71	1144	1.92
1145	2.18	1146	2.43	1147	2.60	1148	2.76	1149	2.65
1150	2.52	1151	3.03	1152	4.77	1153	5.27	1154	5.44
1155	5.51	1156	5.47	1157	5.37	1158	5.31	1159	5.14
1160	5.02	1161	4.78	1162	4.58	1163	4.32	1164	4.08
1165	4.12	1166	4.13	1167	3.49	1168	1.51	1169	0.00
1170	0.00	1171	0.00	1172	0.00	1173	0.00	1174	0.00
1175	0.00	1176	0.00	1177	0.00	1178	0.00	1179	0.00
1180	0.00	1181	0.00	1182	0.00	1183	0.00	1184	0.00
1185	0.00	1186	0.00	1187	0.00	1188	0.00	1189	0.00
1190	0.00	1191	0.00	1192	0.00	1193	0.00	1194	0.00
1195	0.00	1196	0.00	1197	0.00	1198	0.00	1199	0.00
1200	0.00	1201	0.00	1202	0.00	1203	0.00	1204	0.00
1205	0.00	1206	0.00	1207	0.00	1208	0.00	1209	0.00
1210	0.00	1211	0.00	1212	0.00	1213	0.00	1214	0.00
1215	0.00	1216	0.00	1217	0.00	1218	0.00	1219	0.00
1220	0.00	1221	0.00	1222	0.00	1223	0.00	1224	0.00
1225	0.00	1226	0.00	1227	0.00	1228	0.00	1229	0.00
1230	0.00	1231	0.00	1232	0.00	1233	0.00	1234	0.00
1235	0.00	1236	0.00	1237	0.00	1238	0.00	1239	0.00
1240	0.00	1241	0.00	1242	0.00	1243	0.00	1244	0.00
1245	0.00	1246	0.00	1247	0.00	1248	0.00	1249	0.00
1250	0.00	1251	0.00	1252	0.00	1253	0.00	1254	0.00
1255	0.00	1256	0.00	1257	0.00	1258	0.00	1259	0.00
1260	0.00	1261	0.00	1262	0.00	1263	0.00	1264	0.00
1265	0.00	1266	0.00	1267	0.00	1268	0.00	1269	0.00
1270	0.00	1271	0.00	1272	0.00	1273	0.00	1274	0.00
1275	0.00	1276	0.00	1277	0.00	1278	0.00	1279	0.00
1280	0.00	1281	0.00	1282	0.00	1283	0.00	1284	0.00
1285	0.00	1286	0.00	1287	0.00	1288	0.00	1289	0.00
1290	0.00	1291	0.00	1292	0.00	1293	0.00	1294	0.00
1295	0.00	1296	0.00	1297	0.00	1298	0.00	1299	0.00
1300	0.00	1310	0.00	1320	0.00	1330	0.00	1340	0.00
1350	0.00	1360	0.00	1370	0.00	1380	0.00	1390	0.00
1400	0.00	1420	0.00	1440	0.00	1460	0.00	1500	0.00

← PEAK Q_{100} AT 1155 MIN:
5.51 CFS / 5.00 AC

PRORATED FOR 2.60 AC:
$= 5.51 \text{ CFS} \times \frac{2.60 \text{ AC}}{5.00 \text{ AC}}$
$= 2.9 \text{ CFS}$

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 1 Project: PentAir, Moorpark

Page: 4

VCRat Model Input

Model Lines

```
005     1  001C Header place holder
005     1  002C Header place holder
999
999
006     1  001C 060000000516A97                          G1
006     1  002C 060000000516A97                        1 C2
999
```

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Modified Rational Model Results Report

Job: 1 Project: SUBAREAS 30D-32D

Project Description

JOB #3885 PENTAIR, MOORPARK
SUBAREAS 23D-25D OFFSITE TRIBUTARY AREA 26.30 AC

VCRat version: 2.6.2009.7
VCRain version: 200703
DOS EXE version: PC 2.2-200809

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 1 Project: SUBAREAS 30D-32D

Model Results

NODE ID	SOIL TYPE	RAIN ZONE	TC (MIN)	% IMP	SUBAREA DATA AND RESULTS: AREA (AC)	FLOW (CFS)	ACCUMULATED DATA: AREA (AC)	FLOW (CFS)	TIME (MIN)	ROUTING AFTER ACCUMULATION: CHANNEL TYPE	LENGTH (FT)	SLOPE (FT/FT)	SIZE (FT)	H:V (Z)	N VALUES CHNL	VEL SIDES (FT/S)	DEPTH (FT)
1D : SUBAREAS 23D-25D																	
1D 060	J'100	30	0	26	19	26	19	1160	-------	----	-------	---	----	-----	-----	--	--
2D : SUBAREAS 23D-25D																	
2D : Clearing Hydrograph Bank: D																	
2D 060	J'100	30	0	26	19	26	19	1160	-------	----	-------	---	----	-----	-----	--	--

35 MIN PER TC CALCULATOR — USE 30 MIN. MAXIMUM TC INPUT ALLOWED BY VCRAT CALCULATOR

Issue/Warning Messages

TYPE	ERR NO	PROCEDURE	LOCATION	MESSAGE

NO ISSUES OR WARNINGS DETECTED

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 1 Project: SUBAREAS 30D-32D

Hydrograph Printouts

HYDROGRAPH PRINTOUT AT: 2D

DESCRIPTION: SUBAREAS 23D-25D
2D : Clearing Hydrograph Bank: D
TOTAL AREA TO HYDROGRAPH: 26 acres
HYDROGRAPH PEAK: 19 cfs
TIME OF PEAK: 1160 minutes
HYDROGRAPH VOLUME: 0.79 acre-ft

TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)
0	0.00	100	0.00	200	0.00	300	0.00	400	0.00
500	0.00	600	0.01	700	0.01	800	0.01	900	0.01
1000	0.01	1050	0.01	1100	0.02	1110	0.02	1120	0.02
1130	0.02	1131	0.02	1132	0.02	1133	0.02	1134	0.02
1135	0.02	1136	0.03	1137	0.03	1138	0.06	1139	0.95
1140	1.84	1141	3.01	1142	4.19	1143	4.86	1144	5.46
1145	6.44	1146	7.35	1147	8.26	1148	9.17	1149	8.92
1150	8.66	1151	10.68	1152	15.81	1153	17.43	1154	18.11
1155	18.52	1156	18.66	1157	18.80	1158	19.04	1159	19.01
1160	19.11	1161	18.90	1162	18.76	1163	18.52	1164	18.32
1165	18.08	1166	17.77	1167	17.43	1168	17.15	1169	16.53
1170	16.57	1171	16.05	1172	15.50	1173	14.95	1174	14.41
1175	13.58	1176	12.75	1177	11.89	1178	11.07	1179	10.96
1180	10.93	1181	8.71	1182	0.02	1183	0.02	1184	0.02
1185	0.02	1186	0.02	1187	0.02	1188	0.02	1189	0.02
1190	0.02	1191	0.02	1192	0.02	1193	0.01	1194	0.01
1195	0.01	1196	0.01	1197	0.01	1198	0.01	1199	0.01
1200	0.01	1201	0.01	1202	0.01	1203	0.01	1204	0.01
1205	0.01	1206	0.01	1207	0.01	1208	0.01	1209	0.01
1210	0.01	1211	0.01	1212	0.01	1213	0.01	1214	0.01
1215	0.01	1216	0.01	1217	0.01	1218	0.01	1219	0.01
1220	0.01	1221	0.01	1222	0.01	1223	0.01	1224	0.01
1225	0.01	1226	0.01	1227	0.01	1228	0.01	1229	0.01
1230	0.01	1231	0.01	1232	0.01	1233	0.01	1234	0.01
1235	0.01	1236	0.01	1237	0.01	1238	0.01	1239	0.01
1240	0.01	1241	0.01	1242	0.01	1243	0.01	1244	0.01
1245	0.01	1246	0.01	1247	0.01	1248	0.01	1249	0.01
1250	0.01	1251	0.01	1252	0.01	1253	0.01	1254	0.01
1255	0.01	1256	0.01	1257	0.01	1258	0.01	1259	0.01
1260	0.01	1261	0.01	1262	0.01	1263	0.01	1264	0.01
1265	0.01	1266	0.01	1267	0.01	1268	0.01	1269	0.01
1270	0.01	1271	0.01	1272	0.01	1273	0.01	1274	0.01
1275	0.01	1276	0.01	1277	0.01	1278	0.01	1279	0.01
1280	0.01	1281	0.01	1282	0.01	1283	0.01	1284	0.01
1285	0.01	1286	0.01	1287	0.01	1288	0.01	1289	0.01
1290	0.01	1291	0.01	1292	0.01	1293	0.01	1294	0.01
1295	0.01	1296	0.01	1297	0.01	1298	0.01	1299	0.01
1300	0.01	1310	0.01	1320	0.01	1330	0.00	1340	0.00
1350	0.00	1360	0.00	1370	0.00	1380	0.00	1390	0.00
1400	0.00	1420	0.00	1440	0.00	1460	0.00	1500	0.00

← PEAK Q100 AT 1160 MIN: 19.11 CFS / 26.00 AC

PRORATED FOR 26.30 AC:
$= 19.11 \text{ CFS} \times \frac{26.30 \text{ AC}}{26.00 \text{ AC}}$
$= 19.3 \text{ CFS}$

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 1 Project: SUBAREAS 30D-32D

Page: 4

VCRat Model Input

Model Lines

```
005     1  001D Header place holder
005     1  002D Header place holder
999
999
006     1  001D 060000002630A97                          G1
006     1  002D 060000002630A97                        1 D2
999
```

PROPOSED CONDITION

VENTURA COUNTY WATERSHED PROTECTION DISTRICT
TIME OF CONCENTRATION
TC Program Version: 2.6.2009.7
Project: PentAir, Moorpark
Date: 12:00:00 AM
Engineer: Ricky Hwa
Consultant: Thienes Engineering

S U M M A R Y O F C O M P U T A T I O N S

Watershed Name: Proposed 100-Year

Name	Zone	Storm	Soil	Area (acres)	TC (min)
SubArea 1A	J'	100	6.00	3.9 / 4	5.243 / 5
SubArea 6B	J'	100	6.00	1.2 / 1	12.833 / 13
SubArea 10C	J'	100	6.00	0.3 / 0	TC ERROR
SubArea 11D	J'	100	6.00	0.3 / 0	TC ERROR

♠

Watershed Name: Proposed 100-Year

Sub-Area Name: SubArea 1A
Tc: 5.243 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 5.243 min. = 5 min. ← USE 6 MIN. MINIMUM TC INPUT ALLOWED BY VCRAT CALCULATOR.

SUB AREA INPUT DATA

Sub Area Name: SubArea 1A
Total Area (ac): 3.9
Flood Zone: 3
Rainfall Zone: J'
Storm Frequency (years): 100
Development Type: Commercial
Soil Type: 6.00
Percent Impervious: 90
SUB AREA OUTPUT

Intensity (in/hr): 4.056
C Total: 0.913
Sum Q Segments (cfs): 14.44
Q Total (cfs): 14.44
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 314.56
Time of Concentration (min): 5.243

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath 1A
FLOW PATH TRAVEL TIME (min): 3.3333
Flow Type: Overland
Length (ft): 200
Top Elevation (ft): 454.56
Bottom Elevation (ft): 452
Contributing Area (acres): 0.4
Percent of Sub-Area (%): 10.3
Overland Type: Valley
Development Type: Commercial
Map Slope: 0.0128
Effective Slope: 0.0128
Q for Flow Path (cfs): 1.48
Avg Velocity (ft/s): 1.00
Passed Scour Check: N/A

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath 2A
FLOW PATH TRAVEL TIME (min): 1.2074

Flow Type: Street
Length (ft): 250
Top Elevation (ft): 452
Bottom Elevation (ft): 449.36
Contributing Area (acres): 1.35
Percent of Sub-Area (%): 34.6
Street Width (ft): 40
Curb Height (in): 6
Map Slope: 0.0106
Q for Flow Path (cfs): 5.00
Q Top (cfs): 1.48
Q Bottom (cfs): 6.48
Velocity Top (ft/s): 1.91
Velocity Bottom (ft/s): 2.69
Avg Velocity (ft/s): 2.30
Wave Velocity (ft/s): 3.45

DATA FOR FLOW PATH 3

Flow Path Name: FlowPath 3A
FLOW PATH TRAVEL TIME (min): 0.2601
Flow Type: Pipe
Length (ft): 83
Top Elevation (ft): 445.86
Bottom Elevation (ft): 445.44
Contributing Area (acres): 0.45
Percent of Sub-Area (%): 11.5
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 21
Used Pipe Diameter (in): 24
Manning's N: 0.012
Map Slope: 0.0051
Q for Flow Path (cfs): 1.67
Q Top (cfs): 6.48
Q Bottom (cfs): 8.15
Avg Velocity (ft/s): 4.08
Wave Velocity (ft/s): 5.32

DATA FOR FLOW PATH 4

Flow Path Name: FlowPath 4A
FLOW PATH TRAVEL TIME (min): 0.2599
Flow Type: Pipe
Length (ft): 83
Top Elevation (ft): 445.36
Bottom Elevation (ft): 444.94
Contributing Area (acres): 0.65
Percent of Sub-Area (%): 16.7
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 21
Used Pipe Diameter (in): 24
Manning's N: 0.012
Map Slope: 0.0051
Q for Flow Path (cfs): 2.41
Q Top (cfs): 8.15
Q Bottom (cfs): 10.55
Avg Velocity (ft/s): 4.27
Wave Velocity (ft/s): 5.32

DATA FOR FLOW PATH 5

Flow Path Name: FlowPath 5A
FLOW PATH TRAVEL TIME (min): 0.1820
Flow Type: Pipe
Length (ft): 83
Top Elevation (ft): 444.86
Bottom Elevation (ft): 444.44
Contributing Area (acres): 1.05
Percent of Sub-Area (%): 26.9
Initial Pipe Diameter (in): 24
Calculated Pipe Diameter (in): 24

Used Pipe Diameter (in): 24
Manning's N: 0.012
Map Slope: 0.0051
Q for Flow Path (cfs): 3.89
Q Top (cfs): 10.55
Q Bottom (cfs): 14.44
Avg Velocity (ft/s): 6.03
Wave Velocity (ft/s): 7.60
♠
Project: PentAir, Moorpark
Date: 12:00:00 AM
Engineer: Ricky Hwa
Consultant: Thienes Engineering

Sub-Area Name: SubArea 6B
Tc: 12.833 Minutes
DATA FOR SUB AREA 2

SUB AREA TIME OF CONCENTRATION: 12.833 min. = 13 min.

SUB AREA INPUT DATA

Sub Area Name: SubArea 6B
Total Area (ac): 1.15
Flood Zone: 3
Rainfall Zone: J'
Storm Frequency (years): 100
Development Type: Commercial
Soil Type: 6.00
Percent Impervious: 90
SUB AREA OUTPUT

Intensity (in/hr): 2.492
C Total: 0.905
Sum Q Segments (cfs): 2.59
Q Total (cfs): 2.59
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 770.00
Time of Concentration (min): 12.833

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath 6B
FLOW PATH TRAVEL TIME (min): 3.1667
Flow Type: Overland
Length (ft): 190
Top Elevation (ft): 455.15
Bottom Elevation (ft): 453.3
Contributing Area (acres): 0.2
Percent of Sub-Area (%): 17.4
Overland Type: Valley
Development Type: Commercial
Map Slope: 0.0097
Effective Slope: 0.0097
Q for Flow Path (cfs): 0.45
Avg Velocity (ft/s): 1.00
Passed Scour Check: N/A

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath 7B
FLOW PATH TRAVEL TIME (min): 3.3333
Flow Type: Overland
Length (ft): 200
Top Elevation (ft): 453.3
Bottom Elevation (ft): 452.28
Contributing Area (acres): 0.3
Percent of Sub-Area (%): 26.1
Overland Type: Valley
Development Type: Commercial
Map Slope: 0.0051

Effective Slope: 0.0051
Q for Flow Path (cfs): 0.68
Avg Velocity (ft/s): 1.00
Passed Scour Check: N/A

DATA FOR FLOW PATH 3

Flow Path Name: FlowPath 8B
FLOW PATH TRAVEL TIME (min): 3.0833
Flow Type: Overland
Length (ft): 185
Top Elevation (ft): 452.28
Bottom Elevation (ft): 451.2
Contributing Area (acres): 0.25
Percent of Sub-Area (%): 21.7
Overland Type: Valley
Development Type: Commercial
Map Slope: 0.0058
Effective Slope: 0.0058
Q for Flow Path (cfs): 0.56
Avg Velocity (ft/s): 1.00
Passed Scour Check: N/A

DATA FOR FLOW PATH 4

Flow Path Name: FlowPath 9B
FLOW PATH TRAVEL TIME (min): 3.2500
Flow Type: Overland
Length (ft): 195
Top Elevation (ft): 451.2
Bottom Elevation (ft): 447.73
Contributing Area (acres): 0.4
Percent of Sub-Area (%): 34.8
Overland Type: Valley
Development Type: Commercial
Map Slope: 0.0178
Effective Slope: 0.0178
Q for Flow Path (cfs): 0.90
Avg Velocity (ft/s): 1.00
Passed Scour Check: N/A

Project: PentAir, Moorpark
Date: 12:00:00 AM
Engineer: Ricky Hwa
Consultant: Thienes Engineering

Sub-Area Name: SubArea 10C
Tc: 1.667 Minutes
DATA FOR SUB AREA 3

SUB AREA TIME OF CONCENTRATION: 1.667 min. = 2 min. ** TC ERROR ** ← USE 6 min. MINIMUM TC INPUT ALLOWED BY VCRAT CALCULATOR

SUB AREA INPUT DATA

Sub Area Name: SubArea 10C
Total Area (ac): 0.25
Flood Zone: 3
Rainfall Zone: J'
Storm Frequency (years): 100
Development Type: Commercial
Soil Type: 6.00
Percent Impervious: 90
SUB AREA OUTPUT

Intensity (in/hr): 6.600
C Total: 0.919
Sum Q Segments (cfs): 1.52
Q Total (cfs): 1.52
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 100.00
Time of Concentration (min): 1.667

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath 10C
FLOW PATH TRAVEL TIME (min): 1.6667
Flow Type: Overland
Length (ft): 100
Top Elevation (ft): 450.44
Bottom Elevation (ft): 446.52
Contributing Area (acres): 0.25
Percent of Sub-Area (%): 100.0
Overland Type: Valley
Development Type: Commercial
Map Slope: 0.0392
Effective Slope: 0.0392
Q for Flow Path (cfs): 1.52
Avg Velocity (ft/s): 1.00
Passed Scour Check: N/A

Project: PentAir, Moorpark
Date: 12:00:00 AM
Engineer: Ricky Hwa
Consultant: Thienes Engineering

Sub-Area Name: SubArea 11D
Tc: 0.843 Minutes
DATA FOR SUB AREA 4

SUB AREA TIME OF CONCENTRATION: 0.843 min. = 1 min. ** TC ERROR ** ← USE 6 min. MINIMUM TC INPUT ALLOWED BY VCRAT CALCULATOR

SUB AREA INPUT DATA

Sub Area Name: SubArea 11D
Total Area (ac): 0.3
Flood Zone: 3
Rainfall Zone: J'
Storm Frequency (years): 100
Development Type: Undeveloped
Soil Type: 6.00
Percent Impervious: 0
SUB AREA OUTPUT

Intensity (in/hr): 9.540
C Total: NaN
Sum Q Segments (cfs): NaN
Q Total (cfs): NaN
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 50.56
Time of Concentration (min): 0.843

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath 11D
FLOW PATH TRAVEL TIME (min): 0.8426
Flow Type: Overland
Length (ft): 50
Top Elevation (ft): 448.5
Bottom Elevation (ft): 445
Contributing Area (acres): 0.3
Percent of Sub-Area (%): 100.0
Overland Type: Mountain
Development Type: Undeveloped
Map Slope: 0.0700
Effective Slope: 0.0700
Q for Flow Path (cfs): NaN
Avg Velocity (ft/s): 0.99
Passed Scour Check: YES
Scour Velocity (ft/sec): 1.60

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Modified Rational Model Results Report

Job: 1 Project: PentAir, Moorpark

Project Description

JOB #3885 PENTAIR, MOORPARK
SUBAREAS 1A-5A 3.90AC

VCRat version: 2.6.2009.7
VCRain version: 200703
DOS EXE version: PC 2.2-200809

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 1 Project: PentAir, Moorpark

Model Results

NODE ID	SOIL TYPE	RAIN ZONE	TC (MIN)	% IMP	AREA (AC)	FLOW (CFS)	AREA (AC)	FLOW (CFS)	TIME (MIN)	CHANNEL TYPE	LENGTH (FT)	SLOPE (FT/FT)	SIZE (FT)	H:V (Z)	N VALUES CHNL	SIDES	VEL (FT/S)	DEPTH (FT)
1A : SUBAREAS 1A-5A																		
1A	060	J'100	6	90	5	16	5	16	1156	-------	----	-------	---	----	-----	-----	--	--
2A : SUBAREAS 1A-5A																		
2A : Clearing Hydrograph Bank: A																		
2A	060	J'100	6	90	5	16	5	16	1156	-------	----	-------	---	----	-----	-----	--	--

5 MIN. PER TC CALCULATOR. USE 6 MIN. MINIMUM TC INPUT ALLOWED BY VCRAT CALCULATOR.

5 AC. MINIMUM AREA INPUT ALLOWED BY VCRAT CALCULATOR, TO BE PRORATED FOR 3.90 AC.

Issue/Warning Messages

TYPE	ERR NO	PROCEDURE	LOCATION	MESSAGE

NO ISSUES OR WARNINGS DETECTED

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 1 Project: PentAir, Moorpark

Hydrograph Printouts

HYDROGRAPH PRINTOUT AT: 2A

DESCRIPTION: SUBAREAS 1A-5A
2A : Clearing Hydrograph Bank: A

TOTAL AREA TO HYDROGRAPH: 5 acres
HYDROGRAPH PEAK: 16 cfs
TIME OF PEAK: 1156 minutes
HYDROGRAPH VOLUME: 2.24 acre-ft

TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)
0	0.00	100	0.51	200	0.51	300	0.54	400	0.59
500	0.69	600	0.77	700	0.88	800	1.12	900	1.36
1000	1.67	1050	2.00	1100	2.49	1110	3.18	1120	3.85
1130	3.33	1131	3.63	1132	3.93	1133	4.25	1134	4.60
1135	4.94	1136	5.27	1137	5.27	1138	5.22	1139	5.27
1140	5.27	1141	5.50	1142	5.73	1143	5.96	1144	6.29
1145	6.88	1146	7.44	1147	7.81	1148	8.17	1149	7.48
1150	6.75	1151	8.04	1152	13.90	1153	15.15	1154	15.15
1155	15.84	1156	16.17	1157	14.13	1158	7.71	1159	5.50
1160	4.70	1161	4.14	1162	4.09	1163	3.85	1164	3.59
1165	3.63	1166	3.42	1167	3.25	1168	3.04	1169	2.61
1170	2.91	1171	2.78	1172	2.69	1173	2.65	1174	2.61
1175	2.91	1176	2.39	1177	2.35	1178	2.39	1179	2.31
1180	2.27	1181	2.18	1182	2.05	1183	1.97	1184	1.84
1185	1.80	1186	1.71	1187	1.67	1188	1.71	1189	1.75
1190	1.75	1191	1.84	1192	1.88	1193	1.92	1194	1.97
1195	1.97	1196	1.97	1197	1.97	1198	1.97	1199	1.97
1200	1.97	1201	2.01	1202	2.10	1203	2.14	1204	2.18
1205	2.27	1206	2.31	1207	2.31	1208	2.31	1209	2.31
1210	2.31	1211	2.18	1212	2.05	1213	1.92	1214	1.80
1215	1.67	1216	1.54	1217	1.54	1218	1.54	1219	1.54
1220	1.54	1221	1.54	1222	1.54	1223	1.54	1224	1.54
1225	1.54	1226	1.54	1227	1.54	1228	1.54	1229	1.54
1230	1.54	1231	1.54	1232	1.54	1233	1.54	1234	1.54
1235	1.54	1236	1.54	1237	1.54	1238	1.54	1239	1.54
1240	1.54	1241	1.50	1242	1.45	1243	1.41	1244	1.37
1245	1.33	1246	1.28	1247	1.28	1248	1.28	1249	1.28
1250	1.28	1251	1.28	1252	1.28	1253	1.28	1254	1.28
1255	1.28	1256	1.28	1257	1.28	1258	1.28	1259	1.28
1260	1.28	1261	1.28	1262	1.28	1263	1.28	1264	1.28
1265	1.28	1266	1.28	1267	1.28	1268	1.28	1269	1.28
1270	1.28	1271	1.24	1272	1.20	1273	1.15	1274	1.11
1275	1.07	1276	1.03	1277	1.03	1278	1.03	1279	1.03
1280	1.03	1281	1.03	1282	1.03	1283	1.03	1284	1.03
1285	1.03	1286	1.03	1287	1.03	1288	1.03	1289	1.03
1290	1.03	1291	1.03	1292	1.03	1293	1.03	1294	1.03
1295	1.03	1296	1.03	1297	1.03	1298	1.03	1299	1.03
1300	1.03	1310	0.77	1320	0.77	1330	0.51	1340	0.51
1350	0.77	1360	0.51	1370	0.51	1380	0.51	1390	0.51
1400	0.26	1420	0.13	1440	0.10	1460	0.01	1500	0.01

← PEAK Q100 AT 1156 min:
16.17 CFS / 5.00 AC

PRORATED FOR 3.90 AC:
= 16.17 CFS × 3.90 AC / 5.00 AC.
= 12.6 CFS

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 1 Project: PentAir, Moorpark

Page: 4

VCRat Model Input

Model Lines

```
005     1  001A Header place holder
005     1  002A Header place holder
999
999
006     1  001A 060090000506A97                          G1
006     1  002A 060090000506A97                        1 A2
999
```

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Modified Rational Model Results Report

Job: 1 Project: PentAir, Moorpark

Project Description

JOB #3885 PENTAIR, MOORPARK
SUBAREAS 6B-9B 1.15AC

VCRat version: 2.6.2009.7
VCRain version: 200703
DOS EXE version: PC 2.2-200809

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 1 Project: PentAir, Moorpark

Model Results

NODE ID	SOIL TYPE	RAIN ZONE	TC (MIN)	% IMP	AREA (AC)	FLOW (CFS)	ACCUMULATED DATA AREA (AC)	ACCUMULATED DATA FLOW (CFS)	ACCUMULATED DATA TIME (MIN)	ROUTING AFTER ACCUMULATION CHANNEL TYPE	LENGTH (FT)	SLOPE (FT/FT)	SIZE (FT)	H:V (Z)
1B : SUBAREAS 6B-9B														
1B	060	J'100	13	90	5	11	5	11	1155	-------	----	-------	---	----
2B : SUBAREAS 6B-9B														
2B : Clearing Hydrograph Bank: B														
2B	060	J'100	13	90	5	11	5	11	1155	-------	----	-------	---	----

PER TC CALCULATOR

5AC MINIMUM AREA INPUT ALLOWED BY VCRAT CALCULATOR, TO BE PRORATED FOR 1.15AC

Issue/Warning Messages

TYPE	ERR NO	PROCEDURE	LOCATION	MESSAGE

NO ISSUES OR WARNINGS DETECTED

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 1 Project: PentAir, Moorpark

Hydrograph Printouts

HYDROGRAPH PRINTOUT AT: 2B

DESCRIPTION: SUBAREAS 6B-9B
2B : Clearing Hydrograph Bank: B

TOTAL AREA TO HYDROGRAPH: 5 acres
HYDROGRAPH PEAK: 11 cfs
TIME OF PEAK: 1154 minutes
HYDROGRAPH VOLUME: 2.25 acre-ft

TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)
0	0.00	100	0.51	200	0.51	300	0.54	400	0.59
500	0.69	600	0.77	700	0.88	800	1.12	900	1.36
1000	1.67	1050	2.00	1100	2.49	1110	3.02	1120	3.69
1130	3.45	1131	3.55	1132	3.65	1133	3.73	1134	3.87
1135	4.02	1136	4.19	1137	4.37	1138	4.50	1139	4.66
1140	4.81	1141	5.07	1142	5.34	1143	5.59	1144	5.72
1145	6.00	1146	6.28	1147	6.55	1148	6.83	1149	6.62
1150	6.40	1151	7.30	1152	10.25	1153	11.10	1154	11.27
1155	11.27	1156	11.10	1157	10.91	1158	10.64	1159	10.21
1160	9.85	1161	9.44	1162	9.57	1163	9.61	1164	8.61
1165	5.51	1166	4.43	1167	3.89	1168	3.61	1169	3.32
1170	3.39	1171	3.20	1172	3.14	1173	3.00	1174	2.92
1175	2.78	1176	2.72	1177	2.62	1178	2.57	1179	2.49
1180	2.47	1181	2.39	1182	2.47	1183	2.19	1184	2.13
1185	2.07	1186	2.03	1187	1.95	1188	1.91	1189	1.89
1190	1.85	1191	1.82	1192	1.84	1193	1.80	1194	1.82
1195	1.85	1196	1.85	1197	1.87	1198	1.91	1199	1.91
1200	1.95	1201	1.99	1202	2.01	1203	2.05	1204	2.07
1205	2.09	1206	2.13	1207	2.15	1208	2.17	1209	2.21
1210	2.23	1211	2.19	1212	2.17	1213	2.13	1214	2.07
1215	2.01	1216	1.95	1217	1.89	1218	1.84	1219	1.78
1220	1.72	1221	1.66	1222	1.60	1223	1.54	1224	1.54
1225	1.54	1226	1.54	1227	1.54	1228	1.54	1229	1.54
1230	1.54	1231	1.54	1232	1.54	1233	1.54	1234	1.54
1235	1.54	1236	1.54	1237	1.54	1238	1.54	1239	1.54
1240	1.54	1241	1.52	1242	1.50	1243	1.48	1244	1.46
1245	1.44	1246	1.42	1247	1.40	1248	1.38	1249	1.36
1250	1.34	1251	1.32	1252	1.30	1253	1.28	1254	1.28
1255	1.28	1256	1.28	1257	1.28	1258	1.28	1259	1.28
1260	1.28	1261	1.28	1262	1.28	1263	1.28	1264	1.28
1265	1.28	1266	1.28	1267	1.28	1268	1.28	1269	1.28
1270	1.28	1271	1.26	1272	1.24	1273	1.22	1274	1.20
1275	1.18	1276	1.16	1277	1.14	1278	1.12	1279	1.11
1280	1.09	1281	1.07	1282	1.05	1283	1.03	1284	1.03
1285	1.03	1286	1.03	1287	1.03	1288	1.03	1289	1.03
1290	1.03	1291	1.03	1292	1.03	1293	1.03	1294	1.03
1295	1.03	1296	1.03	1297	1.03	1298	1.03	1299	1.03
1300	1.03	1310	0.83	1320	0.77	1330	0.57	1340	0.51
1350	0.71	1360	0.57	1370	0.51	1380	0.51	1390	0.51
1400	0.32	1420	0.13	1440	0.10	1460	0.01	1500	0.01

← PEAK Q_{100} AT 1154 MIN: 11.27 CFS / 5.00 AC.

PRORATED FOR 1.15 AC:
$= 11.27 \text{ CFS} \times \frac{1.15 \text{ AC.}}{5.00 \text{ AC.}}$
$= 2.6 \text{ CFS}$

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 1 Project: PentAir, Moorpark

Page: 4

VCRat Model Input

Model Lines

```
005     1  001B Header place holder
005     1  002B Header place holder
999
999
006     1  001B 060090000513A97                          G1
006     1  002B 060090000513A97                        1 B2
999
```

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Modified Rational Model Results Report

Job: 1 Project: PentAir, Moorpark

Project Description

JOB # 3885 PENTAIR, MOORPARK
SUBAREAS 10C 0.25AC

VCRat version: 2.6.2009.7
VCRain version: 200703
DOS EXE version: PC 2.2-200809

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 1 Project: PentAir, Moorpark

Model Results

NODE ID	SOIL N VALUES	RAIN ZONE	TC VEL (MIN)	% IMP	AREA (AC)	FLOW (CFS)	AREA (AC)	FLOW (CFS)	TIME (MIN)	CHANNEL TYPE	LENGTH (FT)	SLOPE (FT/FT)	SIZE (FT)	H:V (Z)	CHNL SIDES	(FT/S)	(FT)
1C : SUBAREA 10C																	
1C 060	J'100	6	90	5	16	5	16	1156	-------	----	-------	---	----	-----	-----	--	--
2C : SUBAREA 10C																	
2C : Clearing Hydrograph Bank: C																	
2C 060	J'100	6	90	5	16	5	16	1156	-------	----	-------	---	----	-----	-----	--	--

2 MIN. PER TC CALCULATOR. USE 6 MIN. MINIMUM TC INPUT ALLOWED BY VCRAT CALCULATOR

5 AC MINIMUM AREA INPUT ALLOWED BY VCRAT CALCULATOR, TO BE PRORATED FOR 0.25AC

Issue/Warning Messages

TYPE	ERR NO	PROCEDURE	LOCATION	MESSAGE

NO ISSUES OR WARNINGS DETECTED

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 1 Project: PentAir, Moorpark

Hydrograph Printouts

HYDROGRAPH PRINTOUT AT: 2C

DESCRIPTION: SUBAREA 10C
2C : Clearing Hydrograph Bank: C

TOTAL AREA TO HYDROGRAPH: 5 acres
HYDROGRAPH PEAK: 16 cfs
TIME OF PEAK: 1156 minutes
HYDROGRAPH VOLUME: 2.24 acre-ft

TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)
0	0.00	100	0.51	200	0.51	300	0.54	400	0.59
500	0.69	600	0.77	700	0.88	800	1.12	900	1.36
1000	1.67	1050	2.00	1100	2.49	1110	3.18	1120	3.85
1130	3.33	1131	3.63	1132	3.93	1133	4.25	1134	4.60
1135	4.94	1136	5.27	1137	5.27	1138	5.22	1139	5.27
1140	5.27	1141	5.50	1142	5.73	1143	5.96	1144	6.29
1145	6.88	1146	7.44	1147	7.81	1148	8.17	1149	7.48
1150	6.75	1151	8.04	1152	13.90	1153	15.15	1154	15.15
1155	15.84	1156	16.17	1157	14.13	1158	7.71	1159	5.50
1160	4.70	1161	4.14	1162	4.09	1163	3.85	1164	3.59
1165	3.63	1166	3.42	1167	3.25	1168	3.04	1169	2.61
1170	2.91	1171	2.78	1172	2.69	1173	2.65	1174	2.61
1175	2.91	1176	2.39	1177	2.35	1178	2.39	1179	2.31
1180	2.27	1181	2.18	1182	2.05	1183	1.97	1184	1.84
1185	1.80	1186	1.71	1187	1.67	1188	1.71	1189	1.75
1190	1.75	1191	1.84	1192	1.88	1193	1.92	1194	1.97
1195	1.97	1196	1.97	1197	1.97	1198	1.97	1199	1.97
1200	1.97	1201	2.01	1202	2.10	1203	2.14	1204	2.18
1205	2.27	1206	2.31	1207	2.31	1208	2.31	1209	2.31
1210	2.31	1211	2.18	1212	2.05	1213	1.92	1214	1.80
1215	1.67	1216	1.54	1217	1.54	1218	1.54	1219	1.54
1220	1.54	1221	1.54	1222	1.54	1223	1.54	1224	1.54
1225	1.54	1226	1.54	1227	1.54	1228	1.54	1229	1.54
1230	1.54	1231	1.54	1232	1.54	1233	1.54	1234	1.54
1235	1.54	1236	1.54	1237	1.54	1238	1.54	1239	1.54
1240	1.54	1241	1.50	1242	1.45	1243	1.41	1244	1.37
1245	1.33	1246	1.28	1247	1.28	1248	1.28	1249	1.28
1250	1.28	1251	1.28	1252	1.28	1253	1.28	1254	1.28
1255	1.28	1256	1.28	1257	1.28	1258	1.28	1259	1.28
1260	1.28	1261	1.28	1262	1.28	1263	1.28	1264	1.28
1265	1.28	1266	1.28	1267	1.28	1268	1.28	1269	1.28
1270	1.28	1271	1.24	1272	1.20	1273	1.15	1274	1.11
1275	1.07	1276	1.03	1277	1.03	1278	1.03	1279	1.03
1280	1.03	1281	1.03	1282	1.03	1283	1.03	1284	1.03
1285	1.03	1286	1.03	1287	1.03	1288	1.03	1289	1.03
1290	1.03	1291	1.03	1292	1.03	1293	1.03	1294	1.03
1295	1.03	1296	1.03	1297	1.03	1298	1.03	1299	1.03
1300	1.03	1310	0.77	1320	0.77	1330	0.51	1340	0.51
1350	0.77	1360	0.51	1370	0.51	1380	0.51	1390	0.51
1400	0.26	1420	0.13	1440	0.10	1460	0.01	1500	0.01

← PEAK Q100 AT 1156 Min: 16.17 CFS / 5.00 AC.

PRORATED FOR 0.25 AC:
$= 16.17 \text{ CFS} \times \frac{0.25 \text{ AC.}}{5.00 \text{ AC.}}$
$= 0.8 \text{ CFS}$

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 1 Project: PentAir, Moorpark

Page: 4

VCRat Model Input

Model Lines

```
005     1  001C Header place holder
005     1  002C Header place holder
999
999
006     1  001C 060090000506A97                          G1
006     1  002C 060090000506A97                        1 C2
999
```

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Modified Rational Model Results Report

Job: 1 Project: PentAir, Moorpark

Project Description

JOB #3885 PENTAIR, MOORPARK
SUBAREA 11D 0.30AC

VCRat version: 2.6.2009.7
VCRain version: 200703
DOS EXE version: PC 2.2-200809

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 1 Project: PentAir, Moorpark

Page: 2

Model Results

NODE ID	SOIL TYPE	RAIN ZONE	TC (MIN)	% IMP	AREA (AC)	FLOW (CFS)	ACCUMULATED DATA AREA (AC)	ACCUMULATED DATA FLOW (CFS)	ACCUMULATED DATA TIME (MIN)	ROUTING AFTER ACCUMULATION CHANNEL TYPE	LENGTH (FT)	SLOPE (FT/FT)	SIZE (FT)	H:V (Z)
N VALUES		VEL	DEPTH											
CHNL	SIDES	(FT/S)	(FT)											
1D : SUBAREA 11D														
1D	060	J'100	6	0	5	10	5	10	1156	-------	----	-------	---	----
-----	-----	--	--											
2D : SUBAREA 11D														
2D : Clearing Hydrograph Bank: D														
2D	060	J'100	6	0	5	10	5	10	1156	-------	----	-------	---	----
-----	-----	--	--											

1 MIN. PER TC CALCULATOR. USE 6 MIN. MINIMUM TC INPUT ALLOWED BY VCRAT CALCULATOR.

5AC. MINIMUM AREA INPUT ALLOWED BY VCRAT CALCULATOR, TO BE PRORATED FOR 0.30 AC.

Issue/Warning Messages

TYPE	ERR NO	PROCEDURE	LOCATION	MESSAGE

NO ISSUES OR WARNINGS DETECTED

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 1 Project: PentAir, Moorpark

Page: 3

Hydrograph Printouts

HYDROGRAPH PRINTOUT AT: 2D

DESCRIPTION: SUBAREA 11D
2D : Clearing Hydrograph Bank: D

TOTAL AREA TO HYDROGRAPH: 5 acres
HYDROGRAPH PEAK: 10 cfs
TIME OF PEAK: 1156 minutes
HYDROGRAPH VOLUME: 0.15 acre-ft

TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)
0	0.00	100	0.00	200	0.00	300	0.00	400	0.00
500	0.00	600	0.00	700	0.00	800	0.00	900	0.00
1000	0.00	1050	0.00	1100	0.00	1110	0.00	1120	0.00
1130	0.00	1131	0.00	1132	0.00	1133	0.62	1134	1.11
1135	1.47	1136	1.81	1137	1.81	1138	1.76	1139	1.81
1140	1.81	1141	2.00	1142	2.17	1143	2.34	1144	2.58
1145	3.01	1146	3.41	1147	3.68	1148	3.94	1149	3.44
1150	2.92	1151	3.84	1152	8.17	1153	9.14	1154	9.14
1155	9.68	1156	9.93	1157	8.35	1158	3.61	1159	2.00
1160	1.22	1161	0.40	1162	0.29	1163	0.00	1164	0.00
1165	0.00	1166	0.00	1167	0.00	1168	0.00	1169	0.00
1170	0.00	1171	0.00	1172	0.00	1173	0.00	1174	0.00
1175	0.00	1176	0.00	1177	0.00	1178	0.00	1179	0.00
1180	0.00	1181	0.00	1182	0.00	1183	0.00	1184	0.00
1185	0.00	1186	0.00	1187	0.00	1188	0.00	1189	0.00
1190	0.00	1191	0.00	1192	0.00	1193	0.00	1194	0.00
1195	0.00	1196	0.00	1197	0.00	1198	0.00	1199	0.00
1200	0.00	1201	0.00	1202	0.00	1203	0.00	1204	0.00
1205	0.00	1206	0.00	1207	0.00	1208	0.00	1209	0.00
1210	0.00	1211	0.00	1212	0.00	1213	0.00	1214	0.00
1215	0.00	1216	0.00	1217	0.00	1218	0.00	1219	0.00
1220	0.00	1221	0.00	1222	0.00	1223	0.00	1224	0.00
1225	0.00	1226	0.00	1227	0.00	1228	0.00	1229	0.00
1230	0.00	1231	0.00	1232	0.00	1233	0.00	1234	0.00
1235	0.00	1236	0.00	1237	0.00	1238	0.00	1239	0.00
1240	0.00	1241	0.00	1242	0.00	1243	0.00	1244	0.00
1245	0.00	1246	0.00	1247	0.00	1248	0.00	1249	0.00
1250	0.00	1251	0.00	1252	0.00	1253	0.00	1254	0.00
1255	0.00	1256	0.00	1257	0.00	1258	0.00	1259	0.00
1260	0.00	1261	0.00	1262	0.00	1263	0.00	1264	0.00
1265	0.00	1266	0.00	1267	0.00	1268	0.00	1269	0.00
1270	0.00	1271	0.00	1272	0.00	1273	0.00	1274	0.00
1275	0.00	1276	0.00	1277	0.00	1278	0.00	1279	0.00
1280	0.00	1281	0.00	1282	0.00	1283	0.00	1284	0.00
1285	0.00	1286	0.00	1287	0.00	1288	0.00	1289	0.00
1290	0.00	1291	0.00	1292	0.00	1293	0.00	1294	0.00
1295	0.00	1296	0.00	1297	0.00	1298	0.00	1299	0.00
1300	0.00	1310	0.00	1320	0.00	1330	0.00	1340	0.00
1350	0.00	1360	0.00	1370	0.00	1380	0.00	1390	0.00
1400	0.00	1420	0.00	1440	0.00	1460	0.00	1500	0.00

← PEAK Q100 AT 1156 min: 9.93 cfs / 5.00 AC

PRORATED FOR 0.30 AC:
$= 9.93 \text{ cfs} \times \frac{0.30 \text{ AC}}{5.00 \text{ AC}}$
$= 0.6 \text{ cfs}$

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 1 Project: PentAir, Moorpark

Page: 4

VCRat Model Input

Model Lines

```
005     1  001D Header place holder
005     1  002D Header place holder
999
999
006     1  001D 060000000506A97                          G1
006     1  002D 060000000506A97                        1 D2
999
```

APPENDIX C

DETENTION ANALYSIS

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Modified Rational Model Results Report

Job: 1 Project: PentAir, Moorpark

Project Description

JOB #3885 PENTAIR, MOORPARK
SUBAREAS 1A-5A 3.90AC

VCRat version: 2.6.2009.7
VCRain version: 200703
DOS EXE version: PC 2.2-200809

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 1 Project: PentAir, Moorpark

Model Results

NODE ID	SOIL TYPE	RAIN ZONE	TC (MIN)	% IMP	AREA (AC)	FLOW (CFS)	ACCUMULATED AREA (AC)	ACCUMULATED FLOW (CFS)	TIME (MIN)	CHANNEL TYPE	LENGTH (FT)	SLOPE (FT/FT)	SIZE (FT)	H:V (Z)
N VALUES	VEL	DEPTH												
1A : SUBAREAS 1A-5A														
1A	060	J'100	6	90	5	16	5	16	1156	--------	----	--------	---	----
-----	-----	--	--											
2A : SUBAREAS 1A-5A														
2A : Clearing Hydrograph Bank: A														
2A	060	J'100	6	90	5	16	5	16	1156	--------	----	--------	---	----
-----	-----	--	--											

Issue/Warning Messages

TYPE	ERR NO	PROCEDURE	LOCATION	MESSAGE

NO ISSUES OR WARNINGS DETECTED

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 1 Project: PentAir, Moorpark

Hydrograph Printouts

HYDROGRAPH PRINTOUT AT: 2A

DESCRIPTION: SUBAREAS 1A-5A
2A : Clearing Hydrograph Bank: A

TOTAL AREA TO HYDROGRAPH: 5 acres
HYDROGRAPH PEAK: 16 cfs
TIME OF PEAK: 1156 minutes
HYDROGRAPH VOLUME: 2.24 acre-ft

TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)
0	0.00	100	0.51	200	0.51	300	0.54	400	0.59
500	0.69	600	0.77	700	0.88	800	1.12	900	1.36
1000	1.67	1050	2.00	1100	2.49	1110	3.18	1120	3.85
1130	3.33	1131	3.63	1132	3.93	1133	4.25	1134	4.60
1135	4.94	1136	5.27	1137	5.27	1138	5.22	1139	5.27
1140	5.27	1141	5.50	1142	5.73	1143	5.96	1144	6.29
1145	6.88	1146	7.44	1147	7.81	1148	8.17	1149	7.48
1150	6.75	1151	8.04	1152	13.90	1153	15.15	1154	15.15
1155	15.84	1156	16.17	1157	14.13	1158	7.71	1159	5.50
1160	4.70	1161	4.14	1162	4.09	1163	3.85	1164	3.59
1165	3.63	1166	3.42	1167	3.25	1168	3.04	1169	2.61
1170	2.91	1171	2.78	1172	2.69	1173	2.65	1174	2.61
1175	2.91	1176	2.39	1177	2.35	1178	2.39	1179	2.31
1180	2.27	1181	2.18	1182	2.05	1183	1.97	1184	1.84
1185	1.80	1186	1.71	1187	1.67	1188	1.71	1189	1.75
1190	1.75	1191	1.84	1192	1.88	1193	1.92	1194	1.97
1195	1.97	1196	1.97	1197	1.97	1198	1.97	1199	1.97
1200	1.97	1201	2.01	1202	2.10	1203	2.14	1204	2.18
1205	2.27	1206	2.31	1207	2.31	1208	2.31	1209	2.31
1210	2.31	1211	2.18	1212	2.05	1213	1.92	1214	1.80
1215	1.67	1216	1.54	1217	1.54	1218	1.54	1219	1.54
1220	1.54	1221	1.54	1222	1.54	1223	1.54	1224	1.54
1225	1.54	1226	1.54	1227	1.54	1228	1.54	1229	1.54
1230	1.54	1231	1.54	1232	1.54	1233	1.54	1234	1.54
1235	1.54	1236	1.54	1237	1.54	1238	1.54	1239	1.54
1240	1.54	1241	1.50	1242	1.45	1243	1.41	1244	1.37
1245	1.33	1246	1.28	1247	1.28	1248	1.28	1249	1.28
1250	1.28	1251	1.28	1252	1.28	1253	1.28	1254	1.28
1255	1.28	1256	1.28	1257	1.28	1258	1.28	1259	1.28
1260	1.28	1261	1.28	1262	1.28	1263	1.28	1264	1.28
1265	1.28	1266	1.28	1267	1.28	1268	1.28	1269	1.28
1270	1.28	1271	1.24	1272	1.20	1273	1.15	1274	1.11
1275	1.07	1276	1.03	1277	1.03	1278	1.03	1279	1.03
1280	1.03	1281	1.03	1282	1.03	1283	1.03	1284	1.03
1285	1.03	1286	1.03	1287	1.03	1288	1.03	1289	1.03
1290	1.03	1291	1.03	1292	1.03	1293	1.03	1294	1.03
1295	1.03	1296	1.03	1297	1.03	1298	1.03	1299	1.03
1300	1.03	1310	0.77	1320	0.77	1330	0.51	1340	0.51
1350	0.77	1360	0.51	1370	0.51	1380	0.51	1390	0.51
1400	0.26	1420	0.13	1440	0.10	1460	0.01	1500	0.01

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 1 Project: PentAir, Moorpark

Page: 4

VCRat Model Input

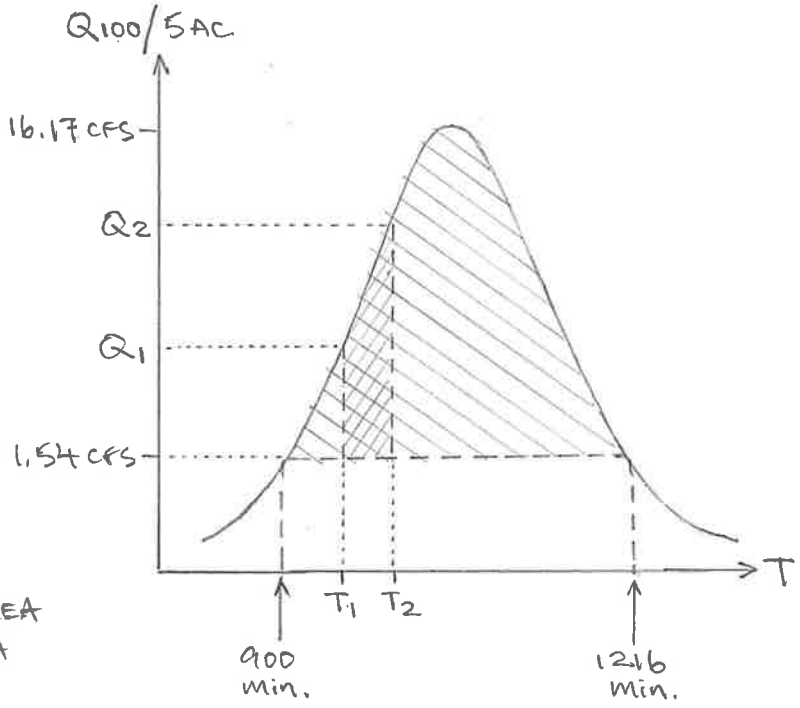
Model Lines

```
005     1  001A Header place holder
005     1  002A Header place holder
999
999
006     1  001A 060090000506A97                              G1
006     1  002A 060090000506A97                            1 A2
999
```

SUBAREAS 1A-5A DETENTION VOLUME CALCULATIONS

TOTAL REQUIRED DETENTION VOLUME FOR SUBAREAS 1A-5A

VOLUME BETWEEN TIMES T_1 AND T_2



16.17 CFS = PEAK Q_{100} RUNOFF FOR SUBAREAS 1A-5A

$$1.2\ \text{CFS} \times \frac{5.00\ \text{AC}}{3.90\ \text{AC}} = 1.54\ \text{CFS}$$

- 1.2 CFS: INTENDED Q_{100} DISCHARGE FROM SUBAREAS 1A-5A
- 5.00 AC: TRIBUTARY AREA FOR HYDROGRAPH
- 3.90 AC: ACTUAL TRIBUTARY AREA FOR SUBAREAS 1A-5A

VOLUME BETWEEN TIMES T_1 AND T_2

$$= (T_2 - T_1) \times \left[(Q_1 - 1.54\ \text{CFS}) + (Q_2 - 1.54\ \text{CFS}) \right] / 2$$

e.g. VOLUME BETWEEN 1000 MIN. AND 1050 MIN.

$$= (1050 - 1000)\ \text{MIN} \times \frac{60\ \text{SEC}}{\text{MIN}} \times \left[(1.67 - 1.54) \frac{\text{FT}^3}{\text{SEC}} + (2.00 - 1.54) \frac{\text{FT}^3}{\text{SEC}} \right] / 2$$

$$= 885\ \text{FT}^3$$

SEE NEXT PAGE FOR TOTAL REQUIRED DETENTION VOLUME

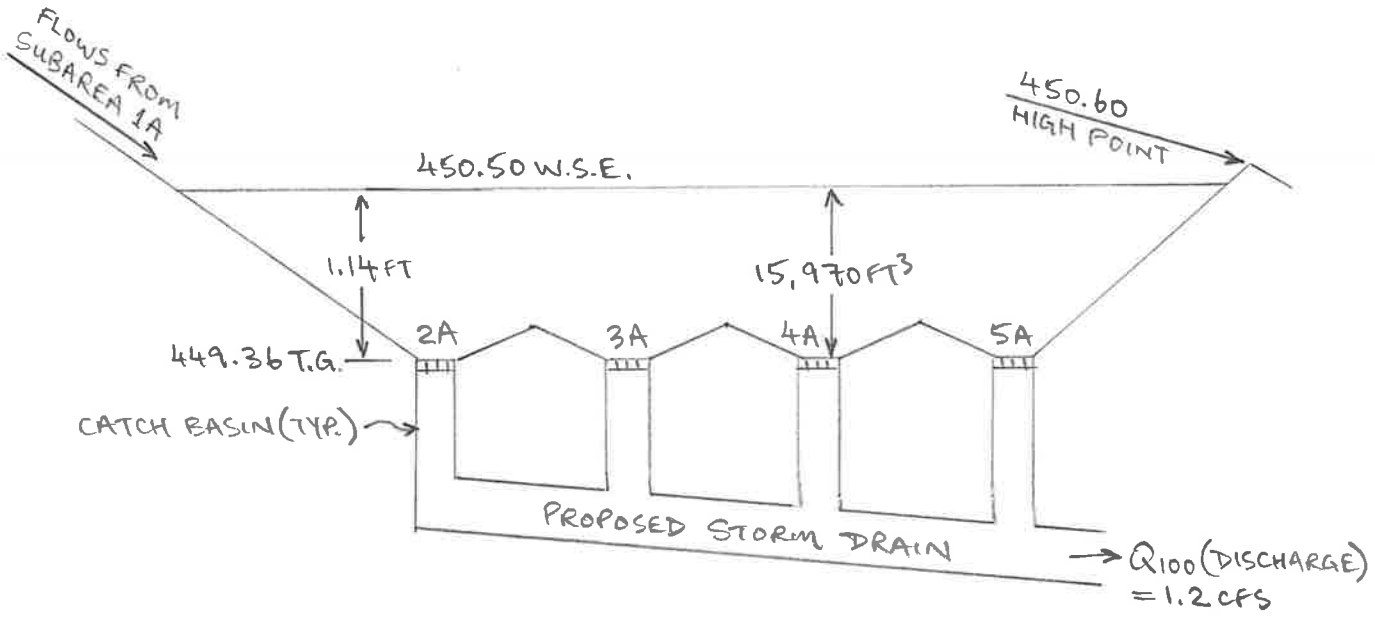
SUBAREAS 1A-5A DETENTION VOLUME CALCULATIONS

Q100-Discharge = 1.20 CFS per 3.9 acres
= 1.54 CFS per 5 acres
Total Volume = 20475 FT^3 per 5 acres = 15970 FT^3 per 3.9 acres

Time(Min)	Q(CFS)	V(FT^3)	Total V(FT^3)
900	1.54	0	0
1000	1.67	390	390
1050	2.00	885	1275
1100	2.49	2115	3390
1110	3.18	777	4167
1120	3.85	1185	5352
1130	3.33	1230	6582
1131	3.63	116	6698
1132	3.93	134	6833
1133	4.25	153	6986
1134	4.60	173	7159
1135	4.94	194	7353
1136	5.27	214	7567
1137	5.27	224	7790
1138	5.22	222	8013
1139	5.27	222	8235
1140	5.27	224	8459
1141	5.50	231	8690
1142	5.73	245	8934
1143	5.96	258	9192
1144	6.29	275	9467
1145	6.88	303	9770
1146	7.44	337	10107
1147	7.81	365	10472
1148	8.17	387	10859
1149	7.48	377	11237
1150	6.75	335	11571
1151	8.04	351	11922
1152	13.90	566	12488
1153	15.15	779	13267
1154	15.15	817	14084
1155	15.84	837	14921
1156	16.17	868	15789
1157	14.13	817	16606
1158	7.71	563	17168
1159	5.50	304	17472
1160	4.70	214	17686
1161	4.14	173	17859
1162	4.09	155	18013
1163	3.85	146	18159
1164	3.59	131	18290
1165	3.63	124	18414
1166	3.42	119	18533
1167	3.25	108	18641
1168	3.04	96	18737
1169	2.61	77	18814
1170	2.91	73	18887
1171	2.78	78	18966
1172	2.69	72	19037
1173	2.65	68	19105
1174	2.61	65	19171
1175	2.91	73	19244
1176	2.39	67	19310
1177	2.35	50	19360
1178	2.39	50	19410
1179	2.31	49	19459
1180	2.27	45	19504
1181	2.18	41	19545
1182	2.05	35	19579
1183	1.97	28	19607
1184	1.84	22	19629
1185	1.80	17	19646
1186	1.71	13	19659
1187	1.67	9	19668
1188	1.71	9	19677
1189	1.75	11	19688
1190	1.75	13	19701
1191	1.84	15	19716
1192	1.88	19	19736
1193	1.92	22	19757
1194	1.97	24	19781
1200	1.97	155	19936
1201	2.01	27	19963
1202	2.10	31	19994
1203	2.14	35	20029
1204	2.18	37	20066
1205	2.27	41	20107
1206	2.31	45	20152
1210	2.31	185	20337
1211	2.18	42	20379
1212	2.05	35	20414
1213	1.92	27	20441
1214	1.80	19	20460
1215	1.67	12	20471
1216	1.54	4	20475

JOB #3885 PENTAIR, MOORPARK
TRUCK YARD VOLUME, SUBAREAS 1A-5A

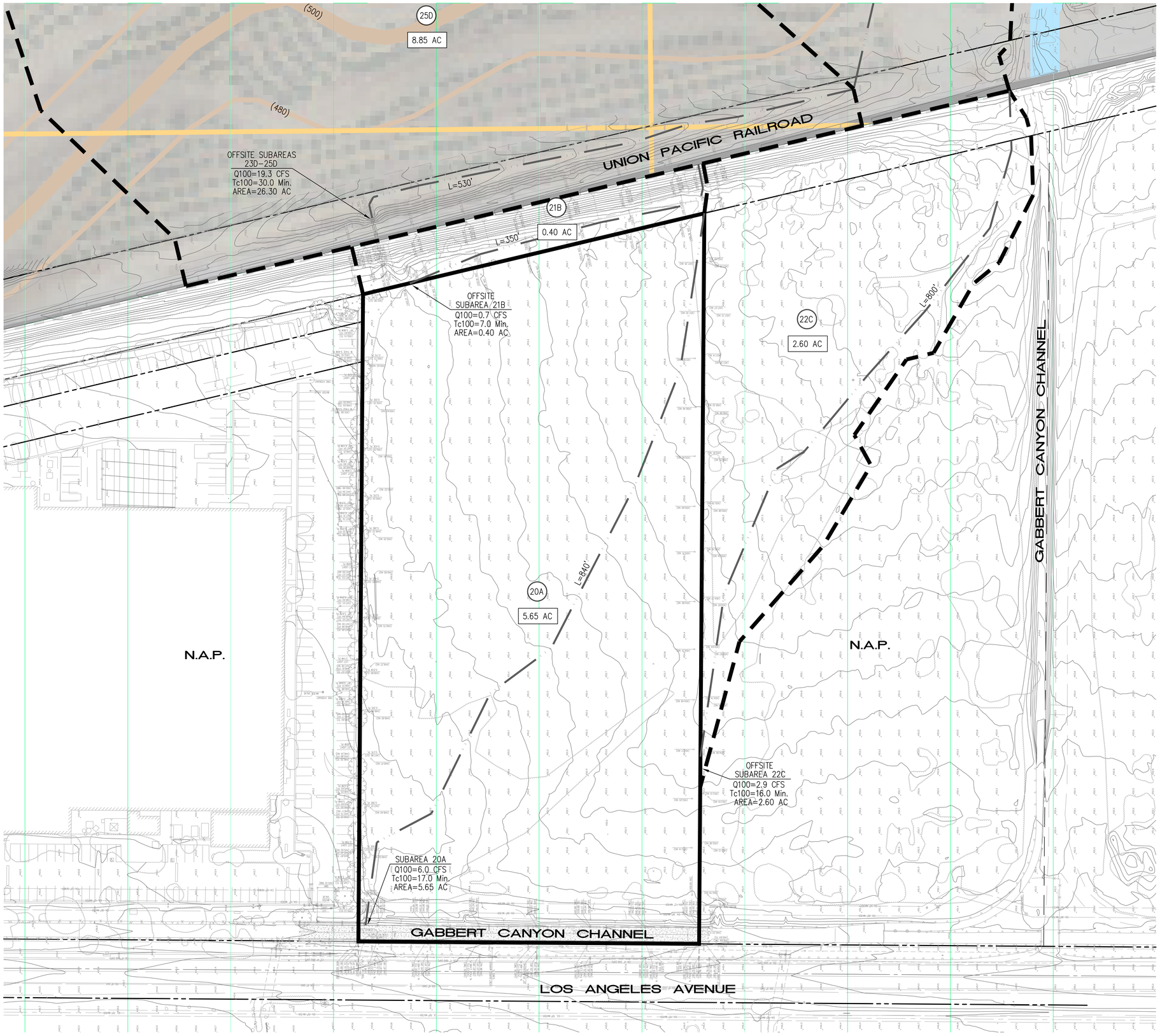
Elevation	Depth (feet)	Area (s.f.)	Volume (c.f.)	Σ Volume (c.f.)	Σ Volume (ac-ft)	
449.36	0.00	0				
			563	563	0.01	
449.60	0.24	4690				
			1659	2222	0.05	
449.80	0.44	11900				
			2821	5043	0.12	
450.00	0.64	16310				
			3753	8796	0.20	
450.20	0.84	21220				
			4711	13507	0.31	15,970 FT³
450.40	1.04	25890				≈ 450.50 W.S.E.
			5636	19143	0.44	1.14 FT DEPTH
450.60	1.24	30470				

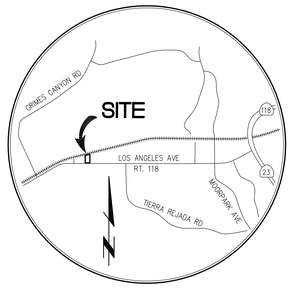


APPENDIX D

HYDROLOGY MAP

SEE SHEET 2





VICINITY MAP
N.T.S.

LEGEND

- PROJECT BOUNDARY
- SUBAREA BOUNDARY
- FLOW PATH
- 1.00 AC. — SUBAREA AREA
- 1A — SUBAREA NUMBER

0 20 40 80 120

SCALE: 1"=40'

Last Update: 5/24/22
O:\3800-3899\3885\3885HYD-EX.dwg

CITY OF MOORPARK
PUBLIC WORKS DEPARTMENT

EXISTING CONDITION HYDROLOGY MAP
PENTAIR

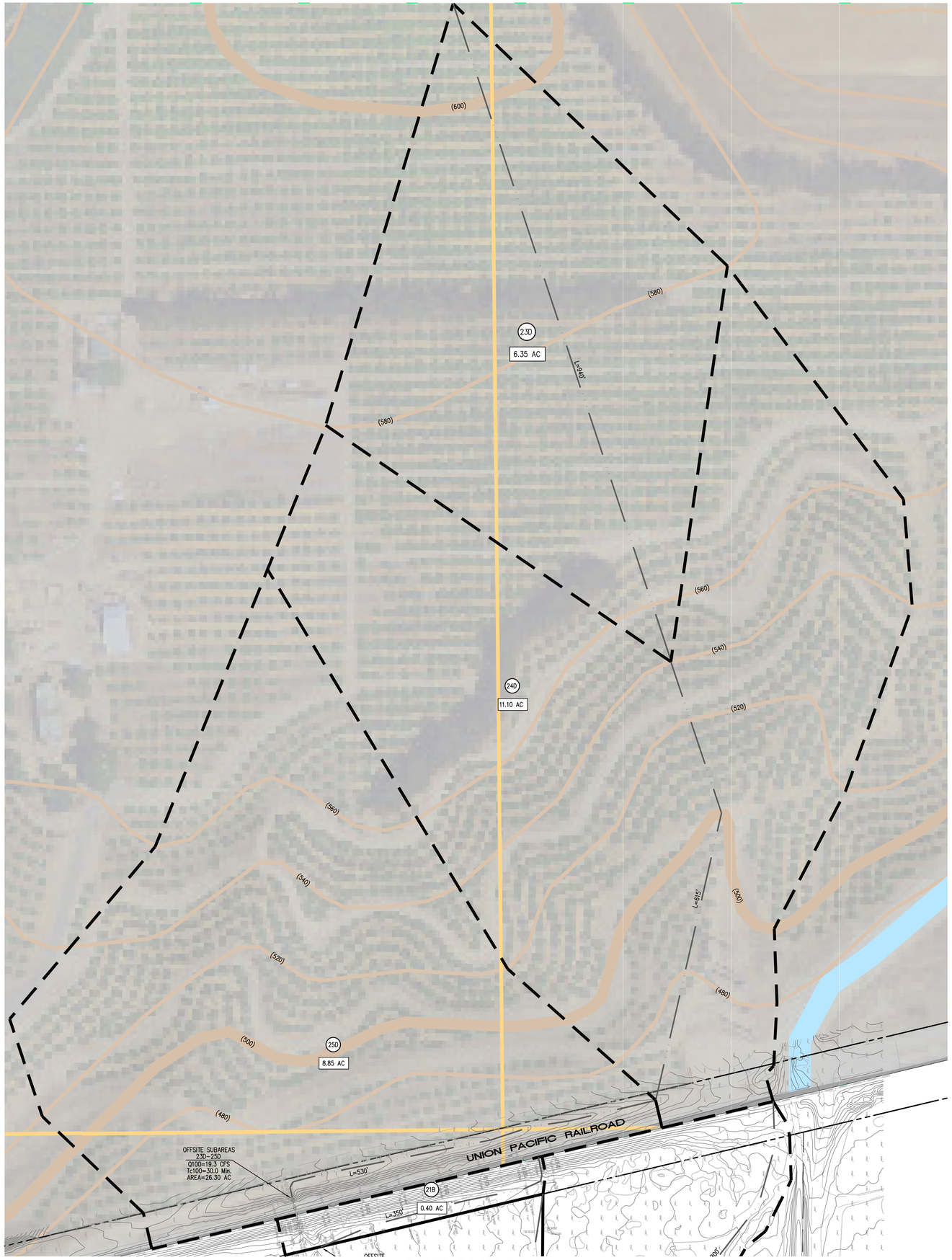
LOS ANGELES AVENUE
MOORPARK, CA

3885/1 OF 2 SHEETS

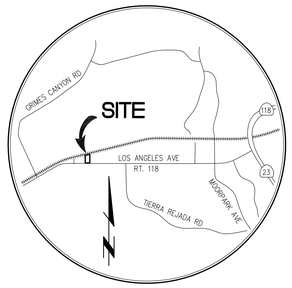
PREPARED FOR:
AMIR DEVELOPMENT CO.
ATTN: STEVEN JUHNKE
8730 WILSHIRE BLVD, SUITE 300
BEVERLY HILLS, CA 90211
PHONE: (310) 657-8987

Thienes Engineering, Inc.
CIVIL ENGINEERING • LAND SURVEYING
14349 FIRESTONE BOULEVARD
LA MIRADA, CALIFORNIA 90638
PH:(714)521-4811 FAX:(714)521-4173

Designed by		Approved by	Date
Date			
Checked by			
Date			
Designed by		Public Works Director	R.C.E. XXXXX
Date			
Checked by			
Date		Sheet 1 of 2 Sheets	



SEE SHEET 1

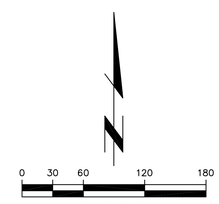


VICINITY MAP

N.T.S.

LEGEND

- PROJECT BOUNDARY
- SUBAREA BOUNDARY
- FLOW PATH
- 1.00 AC. — SUBAREA AREA
- 1A — SUBAREA NUMBER



SCALE: 1"=60'

Last Update:5/24/22
D:\3800-3899\3885\3885HYD-EX.dwg

CITY OF MOORPARK
PUBLIC WORKS DEPARTMENT

EXISTING CONDITION HYDROLOGY MAP

PENTAIR

LOS ANGELES AVENUE
MOORPARK, CA

3885/2 OF 2 SHEETS

PREPARED FOR:
AMIR DEVELOPMENT CO.
ATTN: STEVEN JUHNKE
8730 WILSHIRE BLVD, SUITE 300
BEVERLY HILLS, CA 90211
PHONE: (310) 657-8987

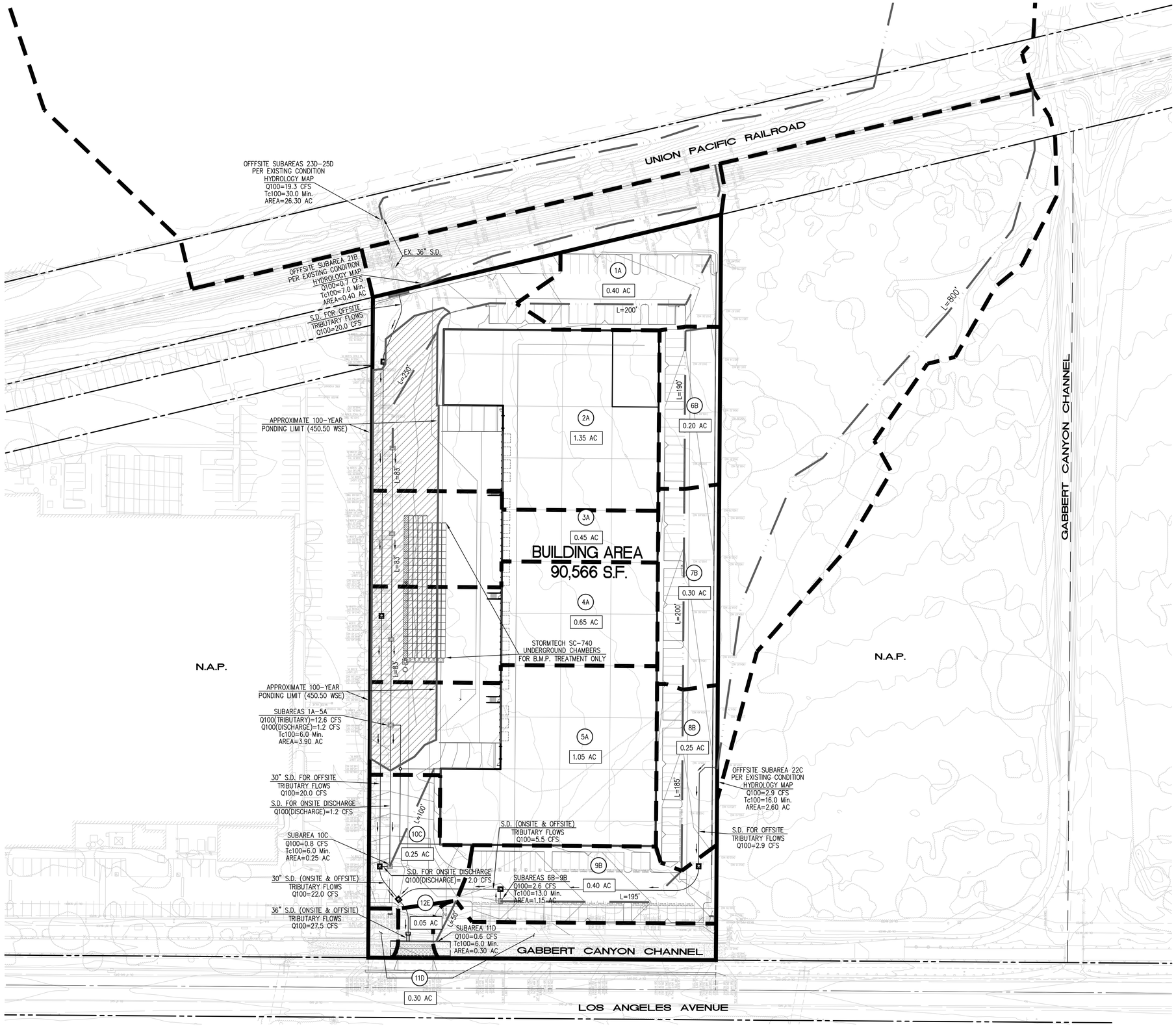
Thienes Engineering, Inc.
CIVIL ENGINEERING · LAND SURVEYING
14349 FIRESTONE BOULEVARD
LA MIRADA, CALIFORNIA 90638
PH:(714)521-4811 FAX:(714)521-4173

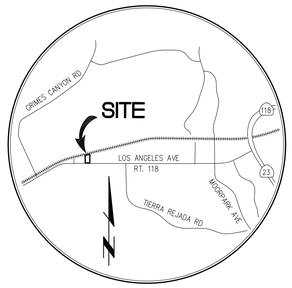
Designed by _____ Date _____
Checked by _____ Date _____
Designed by _____ Date _____
Checked by _____ Date _____

Approved by _____ Date _____
Public Works Director _____ R.C.E. XXXXX

Sheet 2 of 2 Sheets

SEE EXISTING CONDITION HYDROLOGY MAP FOR TRIBUTARY OFFSITE AREAS





VICINITY MAP
N.T.S.

LEGEND

- PROJECT BOUNDARY
- SUBAREA BOUNDARY
- FLOW PATH
- 1.00 AC. — SUBAREA AREA
- 1A — SUBAREA NUMBER
- APPROXIMATE 100-YEAR PONDING LIMIT

0 20 40 80 120
SCALE: 1"=40'

Last Update:5/24/22
O:\3800-3899\3885\3885HYD.dwg

CITY OF MOORPARK
PUBLIC WORKS DEPARTMENT

PROPOSED CONDITION HYDROLOGY MAP

PENTAIR

LOS ANGELES AVENUE MOORPARK, CA

3885/1 OF 1 SHEET

PREPARED FOR:
AMIR DEVELOPMENT CO.
ATTN: STEVEN JUHNKE
8730 WILSHIRE BLVD, SUITE 300
BEVERLY HILLS, CA 90211
PHONE: (310) 657-8987

Thienes Engineering, Inc.
CIVIL ENGINEERING • LAND SURVEYING
14349 FIRESTONE BOULEVARD
LA MIRADA, CALIFORNIA 90638
PH:(714)521-4811 FAX(714)521-4173

Designed by _____ Date _____
Checked by _____ Date _____
Approved by _____ Date _____
Designed by _____ Date _____
Checked by _____ Date _____
Public Works Director _____ R.C.E. XXXXX

Sheet 1 of 1 Sheets

Thienes Engineering, Inc.
CIVIL ENGINEERING • LAND SURVEYING

LOW IMPACT DEVELOPMENT (LID)

FOR:
PENTAIR
10951 WEST LOS ANGELES AVENUE
MOORPARK, CALIFORNIA 93021
APNs: 511-200-26

OWNER:
AMIR DEVELOPMENT COMPANY
8730 WILSHIRE BOULEVARD, SUITE 300
BEVERLY HILLS, CA 90211
PHONE: (310) 657-8987
CONTACT: STEVEN JUHNKE

MAY 20, 2022

JOB NO. 3885

PREPARED BY:
THIENES ENGINEERING
14349 FIRESTONE BOULEVARD
LA MIRADA, CALIFORNIA 90638
PHONE: (714) 521-4811
FAX: (714) 521-4173
CONTACT: MIRA BOGDANOVA (mira@thieneseng.com)

LOW IMPACT DEVELOPMENT (LID)

FOR

“PENTAIR”



PREPARED BY MIRA BOGDANOVA
UNDER THE SUPERVISION OF:

5/20/2022

REINHARD STENZEL DATE
R.C.E. 56155
EXP. 12/31/2022

TABLE OF CONTENTS

1.0 Project Description 1
1.1 Existing Site Description 2
1.2 Proposed Site Description 2
1.3 Geological Investigation 3
2.0 Project Specific Requirements 4
2.1 Peak Storm Water Runoff Discharge Rates 4
2.2 Conserve Natural Areas 4
2.3 Minimize Storm Water Pollutants of Concern 4
2.4 Protect Slopes and Channels 6
2.5 Provide Storm Drain System Stenciling and Signage 6
2.6 Properly Design Outdoor Material Storage Areas 6
2.7 Properly Design Trash Storage Areas 7
2.8 Provide Proof of Ongoing BMP Maintenance 7
2.9 Design Standards for Structural or Treatment Controls BMPs 8
2.10 Provisions Applicable to Individual Priority Project Categories 9
2.10.A Single Family Hillside Home 9
2.10.A.1 Conserve Natural Areas 9
2.10.A.2 Protect Slopes and Channels 9
2.10.A.3 Provide Storm Drain System Stenciling and Signage 9
2.10.A.4 Divert Roof Runoff to Vegetated Areas Before Discharge 9
2.10.A.5 Direct Surface Flow to Vegetated Areas Before Discharge 9
2.10.B 43,560 Square Feet Industrial/Commercial Developments 9
2.10.B.1 Properly Design Loading/Unloading Dock Areas 9
2.10.B.2 Properly Design Repair/Maintenance Bays 10
2.10.B.3 Properly Design Vehicle/Equipment Wash Areas 10
2.10.C Restaurants 10
2.10.C.1 Properly Design Equipment/Accessory Wash Areas 10
2.10.D Retail Gasoline Outlets 11
2.10.D.1 Properly Design Fueling Area 11
2.10.E Automotive Repair Shops 11
2.10.E.1 Properly Design Fueling Area 11
2.10.E.2 Properly Design Repair/Maintenance Bays 12
2.10.E.3 Properly Design Vehicle/Equipment Wash Areas 12
2.10.E.4 Properly Design Loading/Unloading Dock Areas 12
2.10.F Parking Lots 12
2.10.F.1 Properly Design Parking Area 12
2.10.F.2 Properly Design to Limit Oil Contamination and Perform Maintenance 13
2.11 Waiver 13
2.12 Mitigation Funding 14
2.13 Limitation on Use of Infiltration BMPs 14
2.14 Alternative Certification for Storm Water Treatment Mitigation 15
2.15 Resources and Reference 15
3.0 Low Impact Development 16

APPENDICES

Appendix A SWQDv Calculations
Appendix B LID Site Plan
Appendix C BMP Operation and Maintenance
Appendix D Maintenance and Covenant Agreement
Appendix E Educational Materials
Appendix F Infiltration Report

1.0 Project Description

The project site is located at 10951 West Los Angeles Avenue in the City of Moorpark, California (Figure 1), at APNs: 511-200-26 of Ventura County.

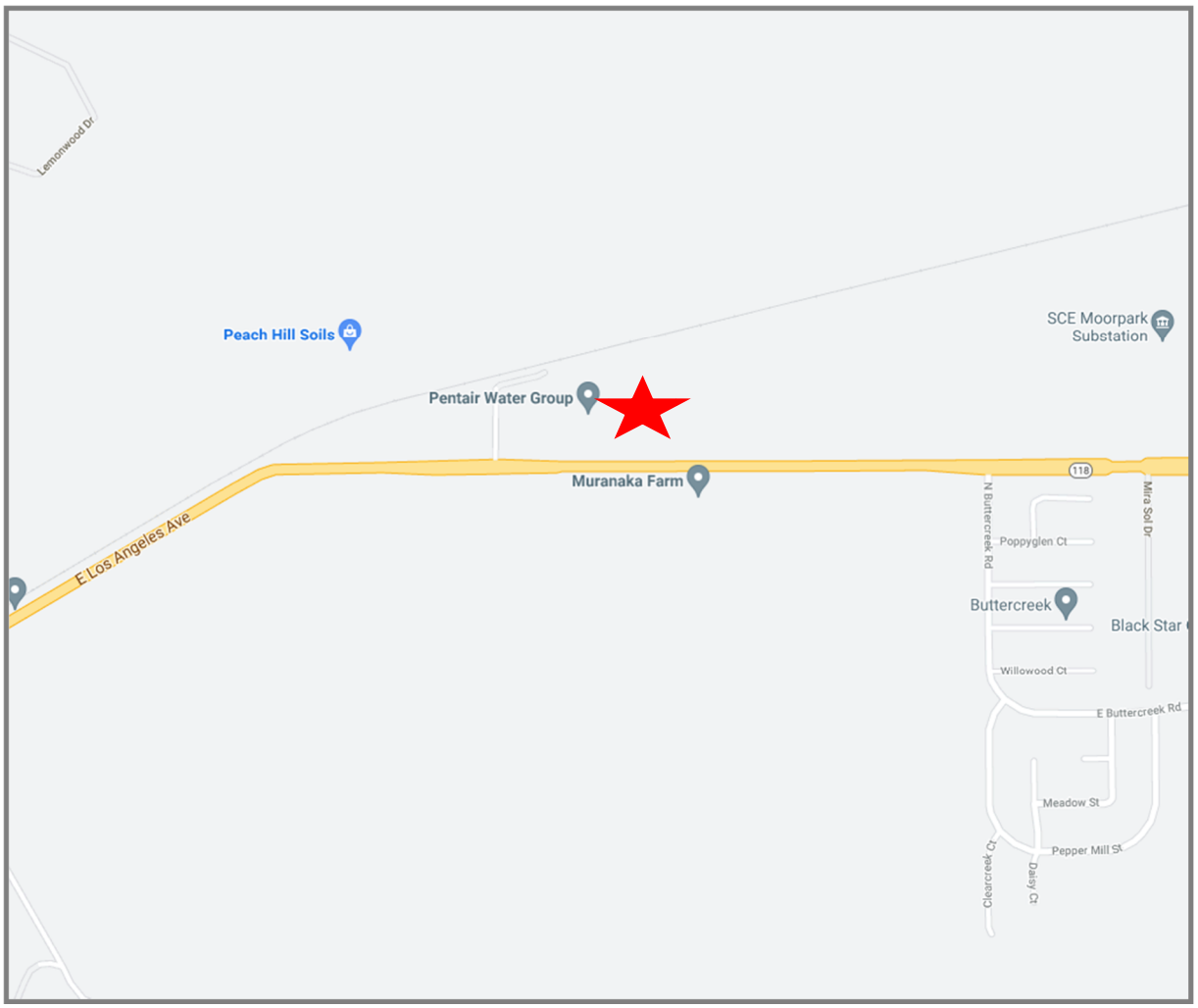


Figure 1 - Vicinity Map (North↑)

The project site encompasses approximately 5.65 acres. Proposed improvements consist of one commercial type building of approximately 90,600 square feet. There will be a truck yard west of the building, vehicle parking lots surrounding the building, and landscape areas scattered throughout the site. The portion of the existing Gabbert Canyon Channel under the site's proposed entry driveway will be replaced with a reinforced concrete box culvert, while the remainder of the channel will remain unchanged.

The entire project site is required to incorporate appropriate LID measures into the design plan. The project will reduce the EIA to less than 5% for the project by retaining the SQDV through the use of an underground retention system.

1.1 Existing Site Description

The project site is an undeveloped dirt lot. It generally surface flows southwesterly to the Gabbert Canyon Channel. An open dirt area immediately to the north of the project and a portion of the easterly neighboring dirt lot surface drains to the site. The existing northerly hillside slopes, north of the railroad tracks, surface drains southerly and crosses under the railroad via a 36-inch pipe, then discharges onto the project site.

1.2 Proposed Site Description

The proposed building, westerly truck yard and northerly parking lot (Subareas 1A-5A, 3.90 acres) drain to catch basins in the truck yard. Runoffs are then conveyed southerly via a proposed onsite storm drain that will connect to the existing Gabbert Canyon Channel.

The easterly and southerly parking lots (Subareas 6B-9B, 1.15 acres) drain southerly to a catch basin in the southerly parking lot. Runoffs from these parking lots are then conveyed westerly via a proposed lateral to the same proposed onsite storm drain system, then southerly to Gabbert Canyon Channel.

The south-westerly drive aisle, immediately north of the site's entry driveway (Subarea 10C, 0.25 acre) drain to a catch basin in the drive aisle. Runoffs from the drive aisle are then conveyed southerly via the same proposed onsite storm drain system to Gabbert Canyon Channel.

The site's southerly frontage landscape area (subarea 11D, 0.30 acres) will surface drain southerly to Gabbert Canyon Channel without being routed to the LID BMPs. This landscape area is considered self-treating areas.

The site's southerly entry driveway fronting Los Angeles Avenue (subarea 12E, 0.05 acres) will surface drain southerly to Los Angeles Avenue without being routed to the LID BMPs.

Tributary offsite flows will be conveyed via proposed storm drains through the project site to Gabbert Canyon Channel under proposed condition, utilizing the same proposed channel connection as the aforementioned onsite flows. Northerly offsite flows will be intercepted by a proposed large grate inlet adjacent to the site's northerly property line (south of existing railroad right-of-way), then conveyed southerly via a proposed 30" storm drain traversing through the site to the proposed connection to Gabbert Canyon Channel. Easterly offsite flows will be intercepted by a proposed C.M.P. riser adjacent to the site's easterly property line, then conveyed southerly via a proposed 18" storm drain traversing through the site to the same proposed connection to Gabbert Canyon Channel.

1.3 Geological Investigation

Per the project's geotechnical engineering investigation performed by NorCal Engineering on July 14, 2020, infiltration is considered feasible. Infiltration rates range from 16.4 to 24.0 in/hr, and an underground retention system will be utilized to meet stormwater treatment requirements. Refer to Appendix F for more information on the subsurface investigation.

2.0 Project Specific Requirements

The project is a new development project that creates one acre or more of impervious surfaces. The design standards apply to the entire development. It also has provision applicable to individual priority project categories for parking lots.

2.1 Peak Storm Water Runoff Discharge Rates

Post-development drainage patterns will continue to travel southerly into Gabbert Canyon Channel. The proposed project will not increase flow rates, volumes, or time of concentration compared to existing conditions.

2.2 Conserve Natural Areas

The following measures are required and should be included in the lot layout, consistent with applicable General Plan and Local Area Plan policies and if appropriate and feasible with the given site conditions:

- *Concentrate or cluster improvements on the least-sensitive portions of the lot and leave the remaining land in a natural undisturbed state; at a minimum, sensitive portions of the lot should include areas covered under Clean Water Act Section 404 such as riparian areas and wetlands;*
- *Limit clearing and grading of native vegetation on the lot to the minimum area needed to build the home, allow access, and provide fire protection; and*
- *Maximize trees and other vegetation at the site by planting additional vegetation, clustering tree areas, and promoting the use of native and/or drought-tolerant plants.*

The property was previously mass graded with no natural areas to conserve.

2.3 Minimize Storm Water Pollutants of Concern

Stormwater runoff from a site has the potential to contribute oil and grease, suspended solids, metals, gasoline, pesticides, and pathogens to the stormwater conveyance system. The development must be designed so as to minimize, to the maximum extent practicable, the introduction of pollutants of concern that may result in significant impacts, generated from site runoff of directly connected impervious areas (DCIA), to the stormwater conveyance system as approved by the building official. Pollutants of concern, consist of any pollutants that exhibit one or more of the following characteristics: current loadings or historic deposits of the pollutant are impacting the beneficial uses of a receiving water, elevated levels of the pollutant are found in sediments of a receiving water and/or have the potential to bioaccumulate in organisms therein, or the detectable inputs of the pollutant are at concentrations or loads considered potentially toxic to humans and/or flora and fauna.

In meeting this specific requirement, "minimization of the pollutants of concern" will require the incorporation of a BMP or combination of BMPs best suited to maximize the reduction of pollutant loadings in that runoff to the Maximum Extent Practicable.

Anticipated pollutants generated from the proposed development are:

- Sediment (TSS and Turbidity)
- Nutrients
- Metals/Metalloids
- Pesticides
- Organic Materials/Oxygen Demanding Substances
- Oil and Grease/Organics Associated with Petroleum
- Bacteria and Viruses
- Trash & Debris

The receiving waters and their impairments are:

- Calleguas Creek Reach 6: Ammonia, Chlordane, Chloride, Chlorpyrifos, Diazinon, Dieldrin, Indicator Bacteria, Nitrate and Nitrite, Nitrogen as Nitrate (NO3), Sedimentation/Siltation, Sulfates, Total Dissolved Solids and Toxicity.
- Calleguas Creek Reach 3: Ammonia, Chlordane, Chloride, DDT (Dichlorodiphenyltrichloroethane), Dieldrin, Indicator Bacteria, Nitrate and Nitrite, PCBs (Polychlorinated biphenyls), Sedimentation/Siltation, Total Dissolved Solids, Toxaphene and Trash.
- Calleguas Creek Reach 2: Ammonia, ChemA, Chlordane, Copper, DDT (Dichlorodiphenyltrichloroethane), Dieldrin, Endosulfan, Indicator Bacteria, PCBs (Polychlorinated biphenyls), Sedimentation/Siltation, Toxaphene, Toxicity, and Trash.
- Calleguas Creek Reach 1: Ammonia, ChemA, Chlordane, Copper, DDT (Dichlorodiphenyltrichloroethane), Dieldrin, Endosulfan, Indicator Bacteria, PCBs (Polychlorinated biphenyls), Sedimentation/Siltation, Toxaphene, Toxicity, and Trash.

The pollutants of concern of the project site are:

- Sediment
- Nutrients
- Metals/Metalloids
- Pesticides
- Trash and Debris
- Other Organics
- Bacteria and Viruses
- Salinity
- Toxicity

The proposed project will treat stormwater runoff and disconnect runoff from impervious areas by means of underground retention system.

2.4 Protect Slopes and Channels

Project plans must include BMPs consistent with local codes and ordinances and LID to decrease the potential of slopes and/or channels from eroding and impacting stormwater runoff:

- *Convey runoff safely from the tops of slopes and stabilize disturbed slopes.*
- *Utilize natural drainage systems to the maximum extent practicable.*
- *Control or reduce or eliminate flow to natural drainage systems to the maximum extent practicable.*
- *Stabilize permanent channel crossings.*
- *Vegetate slopes with native or drought tolerant vegetation.*
- *Install energy dissipaters, such as riprap, at the outlets of new storm drains, culverts, conduits, or channels that enter unlined channels in accordance with applicable specifications to minimize erosion, with the approval of all agencies with jurisdiction, e.g., the U.S. Army Corps of Engineers and the California Department of Fish and Game.*

Existing slopes will remain undisturbed. There are no natural drainage systems or channel crossings to protect.

2.5 Provide Storm Drain System Stenciling and Signage

Storm drain stencils are highly visible source controls that are typically placed directly adjacent to storm drain inlets. The stencil contains a brief statement that prohibits the dumping of improper materials into the stormwater conveyance system. Graphical icons, either illustrating anti-dumping symbols or images of receiving water fauna, are effective supplements to the anti-dumping message.

- *All storm drain inlets and catch basins within the project area must be stenciled with prohibitive language (such as: "NO DUMPING – DRAINS TO OCEAN") and/or graphical icons to discourage illegal dumping.*
- *Signs and prohibitive language and/or graphical icons, which prohibit illegal dumping, must be posted at public access points along channels and creeks within the project area.*
- *Legibility of stencils and signs must be maintained.*

All proposed inlets will be stenciled with prohibitive language and/or graphical icons to prevent dumping. Legibility of the stencils/markers will be maintained on a yearly basis, or as needed.

2.6 Properly Design Outdoor Material Storage Areas

Outdoor material storage areas refer to storage areas or storage facilities solely for the storage of materials. Improper storage of materials outdoors may provide an opportunity for toxic compounds, oil and grease, heavy metals, nutrients, suspended solids, and other pollutants to enter the stormwater conveyance system. Where proposed project plans include outdoor areas for storage of materials that may contribute pollutants to the stormwater conveyance system, the following Structural or Treatment BMPs are required:

- *Materials with the potential to contaminate stormwater must be: (1) placed in an enclosure such as, but not limited to, a cabinet, shed, or similar structure that prevents contact with runoff or spillage to the stormwater conveyance system; or (2) protected by secondary containment structures such as berms, dikes, or curbs.*
- *The storage area must be paved and sufficiently impervious to contain leaks and spills.*
- *The storage area must have a roof or awning to minimize collection of stormwater within the secondary containment area.*

There are no proposed outdoor material storage areas for this project. Any and all materials will be stored indoors.

2.7 Properly Design Trash Storage Areas

A trash storage area refers to an area where a trash receptacle or receptacles are located for use as a repository for solid wastes. Loose trash and debris can be easily transported by water or wind into nearby storm drain inlets, channels, and/or creeks. All trash container areas must meet the following Structural or Treatment Control BMP requirements (individual single family residences are exempt from these requirements):

- *Trash container areas must have drainage from adjoining roofs and pavement diverted around the area(s).*
- *Trash container areas must be screened or walled to prevent off-site transport of trash.*

Trash enclosures will be located away from roof drainage. The bin's lid will remain close when not in use and will be walled off to prevent transport by wind and contact with rainfall.

2.8 Provide Proof of Ongoing BMP Maintenance

Improper maintenance is one of the most common reasons why water quality controls will not function as designed or which may cause the system to fail entirely. It is important to consider who will be responsible for maintenance of a permanent BMP, and what equipment is required to perform the maintenance properly. If Structural or Treatment Control BMPs are required or included in project plans, the applicant must provide verification of maintenance provisions through such means as may be appropriate, including, but not limited to legal agreements, covenants, CEQA mitigation requirements and/or Conditional Use Permits.

The verification will include the developer's signed statement, as part of the project application, accepting responsibility for all Structural and Treatment Control BMP maintenance until the time the property is transferred and, where applicable, a signed agreement from the public entity assuming responsibility for Structural or Treatment Control BMP maintenance. The transfer of property to a private or public owner must have conditions requiring the recipient to assume responsibility for maintenance of any Structural or Treatment Control BMP to be included in the sales or lease agreement for that property, and will be the owner's responsibility. The condition of transfer shall include a provision that the property owners conduct maintenance inspection of all Structural or Treatment Control BMPs at least once a year and retain proof of inspection.

For residential properties where the Structural or Treatment Control BMPs are located within a common area, which will be maintained by a homeowner's association, language regarding the responsibility for maintenance must be included in the project's conditions, covenants and restrictions (CC&Rs). Printed educational materials will be required to accompany the first deed transfer to highlight the existence of the requirement and to provide information on what stormwater management facilities are present, signs that maintenance is needed, how the necessary maintenance can be performed, and assistance that the Permittee can provide. The transfer of this information shall also be required with any subsequent sale of the property.

Structural or Treatment Control BMPs located within a public area proposed for transfer will be the responsibility of the developer until accepted for transfer by the appropriate public agency. Structural or Treatment Control BMPs proposed for transfer must meet design standards adopted by the public entity for the BMP installed and should be approved by the appropriate public agency prior to its installation.

The property owner/operator will maintain proof of ongoing maintenance at the site as recorded in the covenant and agreement (see Appendix D).

2.9 Design Standards for Structural or Treatment Controls BMPs

The following categories of Planning Priority Projects are required to design and implement post-construction treatment controls to mitigate stormwater pollution:

- *a) Single-family hillside residential developments of one acre or more of surface area;*
- *b) Housing developments (includes single family homes, multifamily homes, condominium, and apartments) of ten units or more;*
- *c) A 43,560 square feet or more impervious surface area industrial/commercial development;*
- *d) Automotive service facilities (SIC 5013, 5014, 5541, 7532-7534 and 7536-7538) [5,000 square feet or more of surface area];*
- *e) Retail gasoline outlets [5,000 square feet or more of impervious surface area and with projected Average Daily Traffic (ADT) of 100 or more vehicles]. Subsurface Treatment Control BMPs which may endanger public safety (i.e., create an explosive environment) are considered not appropriate;*
- *f) Restaurants (SIC 5812) [5,000 square feet or more of surface area];*
- *g) Parking lots 5,000 square feet or more of surface area or with 25 or more parking spaces;*
- *h) Projects located in, adjacent to or discharging directly to an ESA that meet the following threshold conditions:*
    - *(1) Discharge stormwater and urban runoff that is likely to impact a sensitive biological species or habitat; and*
    - *(2) Create 2,500 square feet or more of impervious surface area.*
- *i) Redevelopment projects in subject categories that meet Redevelopment thresholds.*

The project is required to incorporate appropriate stormwater mitigation measures into the design plan for the entire site. The proposed project will treat and mitigate flows per LID guidelines by

effectively treating the pollutants of concern by means of underground storage and proprietary biofiltration units.

2.10 Provisions Applicable to Individual Priority Project Categories

2.10.A Single Family Hillside Home

The project site is not a single family hillside development.

2.10.A.1 Conserve Natural Areas

The project site is not a single family hillside development.

2.10.A.2 Protect Slopes and Channels

The project site is not a single family hillside development.

2.10.A.3 Provide Storm Drain System Stenciling and Signage

The project site is not a single family hillside development.

2.10.A.4 Divert Roof Runoff to Vegetated Areas Before Discharge

The project site is not a single family hillside development.

2.10.A.5 Direct Surface Flow to Vegetated Areas Before Discharge

The project site is not a single family hillside development.

2.10.B 43,560 Square Feet Industrial/Commercial Developments

2.10.B.1 Properly Design Loading/Unloading Dock Areas

Loading/unloading dock areas have the potential for material spills to be quickly transported to the storm water conveyance system. To minimize this potential, the following design criteria are required:

- *Cover loading dock areas or design drainage to minimize run-on and runoff of storm water.*
- *Direct connections to storm drains from depressed loading docks (truck wells) are prohibited.*

The proposed project will construct one aboveground truck dock. The concrete surface is designed to minimize run-on to the loading docks and will be treated by underground retention. A hydrodynamic separator will be utilized to filter out pollutants prior to entering the

underground retention system. Additionally, the proposed building will be utilized as a warehouse for finished goods and consequently, items being loaded and unloaded do not have the potential to contribute to stormwater pollution.

2.10.B.2 Properly Design Repair/Maintenance Bays

Oil and grease, solvents, car battery acid, coolant and gasoline from the repair/maintenance bays can negatively impact storm water if allowed to come into contact with storm water runoff. Therefore, design plans for repair bays must include the following:

- *Repair/maintenance bays must be indoors or designed in such a way that do not allow storm water run-on or contact with storm water runoff.*
- *Design a repair/maintenance bay drainage system to capture all washwater, leaks and spills. Connect drains to a sump for collection and disposal. Direct connection of the repair/maintenance bays to the storm drain system is prohibited. If required by local jurisdiction, obtain an Industrial Waste Discharge Permit.*

Not applicable, the proposed project will not include any repair or maintenance bays.

2.10.B.3 Properly Design Vehicle/Equipment Wash Areas

The activity of vehicle/equipment washing/steam cleaning has the potential to contribute metals, oil and grease, solvents, phosphates, and suspended solids to the stormwater conveyance system. Project plans are required to designate an area for washing/steam cleaning of vehicles and equipment. This area is required to be:

- *Self-contained and/or covered, equipped with a clarifier, or other pretreatment facility, and properly connected to a sanitary sewer or to a permitted disposal facility.*

Not applicable, the proposed project will not include any vehicle/equipment wash areas.

2.10.C Restaurants

2.10.C.1 Properly Design Equipment/Accessory Wash Areas

The activity of outdoor equipment/accessory washing/steam cleaning has the potential to contribute metals, oil and grease, solvents, phosphates, and suspended solids to the storm water conveyance system. Include in the project plans an area for the washing/steam cleaning of equipment and accessories. This area must be:

- *Self-contained, equipped with a grease trap, and properly connected to a sanitary sewer.*
- *If the wash area is to be located outdoors, it must be covered, paved, have secondary containment, and be connected to the sanitary sewer.*

The proposed project is not a restaurant.

2.10.D Retail Gasoline Outlets

2.10.D.1 Properly Design Fueling Area

Fueling areas have the potential to contribute oil and grease, solvents, car battery acid, coolant and gasoline to the storm water conveyance system. The project plans must include the following BMPs:

- *The fuel dispensing area must be covered with an overhanging roof structure or canopy. The canopy's minimum dimensions must be equal to or greater than the area within the grade break. The canopy must not drain onto the fuel dispensing area, and the canopy downspouts must be routed to prevent drainage across the fueling area.*
- *The fuel dispensing area must be paved with Portland cement concrete (or equivalent smooth impervious surface), and the use of asphalt concrete shall be prohibited.*
- *The fuel dispensing area must have a 2% to 4% slope to prevent ponding, and must be separated from the rest of the site by a grade break that prevents run-on of storm water to the extent practicable.*
- *At a minimum, the concrete fuel dispensing area must extend 6.5 feet (2.0 meters) from the corner of each fuel dispenser, or the length at which the hose and nozzle assembly may be operated plus 1 foot (0.3 meter), whichever is less.*

The proposed project is not a retail gasoline outlet.

2.10.E Automotive Repair Shops

2.10.E.1 Properly Design Fueling Area

Fueling areas have the potential to contribute oil and grease, solvents, car battery acid, coolant and gasoline to the storm water conveyance system. The project plans must include the following BMPs:

- *The fuel dispensing area must be covered with an overhanging roof structure or canopy. The canopy's minimum dimensions must be equal to or greater than the area within the grade break. The canopy must not drain onto the fuel dispensing area, and the canopy downspouts must be routed to prevent drainage across the fueling area.*
- *The fuel dispensing area must be paved with Portland cement concrete (or equivalent smooth impervious surface), and the use of asphalt concrete shall be prohibited.*
- *The fuel dispensing area must have a 2% to 4% slope to prevent ponding, and must be separated from the rest of the site by a grade break that prevents run-on of storm water to the extent practicable.*
- *At a minimum, the concrete fuel dispensing area must extend 6.5 feet (2.0 meters) from the corner of each fuel dispenser, or the length at which the hose and nozzle assembly may be operated plus 1 foot (0.3 meter), whichever is less.*

Not applicable, no fuel dispensing areas proposed.

2.10.E.2 Properly Design Repair/Maintenance Bays

Oil and grease, solvents, car battery acid, coolant and gasoline from the repair/maintenance bays can negatively impact storm water if allowed to come into contact with storm water runoff. Therefore, design plans for repair bays must include the following:

- *Repair/maintenance bays must be indoors or designed in such a way that doesn't allow storm water run-on or contact with storm water runoff.*
- *Design a repair/maintenance bay drainage system to capture all wash-water, leaks and spills.*
- *Connect drains to a sump for collection and disposal. Direct connection of the repair/maintenance bays to the storm drain system is prohibited. If required by local jurisdiction, obtain an Industrial Waste Discharge Permit.*

The proposed project is not an automotive repair shop.

2.10.E.3 Properly Design Vehicle/Equipment Wash Areas

The activity of vehicle/equipment washing/steam cleaning has the potential to contribute metals, oil and grease, solvents, phosphates, and suspended solids to the storm water conveyance system. Include in the project plans an area for washing/steam cleaning of vehicles and equipment. This area must be:

- *Self-contained and/or covered, equipped with a clarifier, or other pretreatment facility, and properly connected to a sanitary sewer or to a permitted disposal facility.*

The proposed project is not an automotive repair shop.

2.10.E.4 Properly Design Loading/Unloading Dock Areas

Loading/unloading dock areas have the potential for material spills to be quickly transported to the storm water conveyance system. To minimize this potential, the following design criteria are required:

- *Cover loading dock areas or design drainage to minimize run-on and runoff of storm water.*
- *Direct connections to storm drains from depressed loading docks (truck wells) are prohibited.*

The proposed project is not an automotive repair shop.

2.10.F Parking Lots

2.10.F.1 Properly Design Parking Area

Parking lots contain pollutants such as heavy metals, oil and grease, and polycyclic aromatic hydrocarbons that are deposited on parking lot surfaces by motor-vehicles. These pollutants are

directly transported to surface waters. To minimize the offsite transport of pollutants, the following design criteria are required:

- *Reduce impervious land coverage of parking areas.*
- *Infiltrate runoff before it reaches storm drain system.*
- *Treat runoff before it reaches storm drain system.*

The proposed project is designed so that pollutants from the impervious surfaces are disconnected prior to discharging offsite. Runoff from the parking lots are transported through underground retention system for treatment.

2.10.F.2 Properly Design to Limit Oil Contamination and Perform Maintenance

Parking lots may accumulate oil, grease, and water insoluble hydrocarbons from vehicle drippings and engine system leaks.

- *Treat to remove oil and petroleum hydrocarbons at parking lots that are heavily used (e.g. fast food outlets, lots with 25 or more parking spaces, sports event parking lots, shopping malls, grocery stores, discount warehouse stores).*
- *Ensure adequate operation and maintenance of treatment systems particularly sludge and oil removal, and system fouling and plugging prevention control.*

The project owner will ensure that grease and oil are contained. The parking lot will be swept on a monthly basis, minimum, and before any rain events. Absorbent materials will be used to collect any spilled oil, and disposed of properly, to ensure they do not contaminate stormwater. The entire site will utilize hydrodynamic separators to collect drainage from impervious areas prior to flowing through the underground retention system for treatment. Hydrocarbon booms and oil skimmers from the hydrodynamic separators improve removal efficiency.

2.11 Waiver

A Permittee may, through adoption of an ordinance or code incorporating the treatment requirements of the SUSMP, provide for a waiver from the requirement if impracticability for a specific property can be established. A waiver of impracticability shall be granted only when all other Structural or Treatment Control BMPs have been considered and rejected as infeasible. Recognized situations of impracticability include, (i) extreme limitations of space for treatment on a redevelopment project, (ii) unfavorable or unstable soil conditions at a site to attempt infiltration, and (iii) risk of ground water contamination because a known unconfined aquifer lies beneath the land surface or an existing or potential underground source of drinking water is less than 10 feet from the soil surface. Any other justification for impracticability must be separately petitioned by the Permittee and submitted to the Regional Board for consideration. The Regional Board may consider approval of the waiver justification or may delegate the authority to approve a class of waiver justifications to the Regional Board Executive Officer. The supplementary waiver justification becomes recognized and effective only after approval by the Regional Board or the Regional Board Executive Officer. A waiver granted by a Permittee

to any development or redevelopment project may be revoked by the Regional Board Executive Officer for cause and with proper notice upon petition.

The proposed project does not require a waiver of impracticability from any LID conditions.

2.12 Mitigation Funding

The Permittees may propose a management framework, for endorsement by the Regional Board Executive Officer, to support regional or sub-regional solutions to storm water pollution, where any of the following situations occur:

- *A waiver for impracticability is granted;*
- *Legislative funds become available;*
- *Off-site mitigation is required because of loss of environmental habitat; or*
- *An approved watershed management plan or a regional storm water mitigation plan exists that incorporates an equivalent or improved strategy for storm water mitigation.*

No management framework for mitigation funding is necessary for the proposed project.

Funding will be the responsibility of the owner:

Amir Development Company
8730 Wilshire Boulevard, Suite 300
Beverly Hills, CA 90211
Phone: (310) 657-8987
Contact: Steven Juhnke

2.13 Limitation on Use of Infiltration BMPs

Three factors significantly influence the potential for storm water to contaminate ground water. They are (i) pollutant mobility, (ii) pollutant abundance in storm water, (iii) and soluble fraction of pollutant. The risk of contamination of groundwater may be reduced by pretreatment of storm water. A discussion of limitations and guidance for infiltration practices is contained in, Potential Groundwater Contamination from Intentional and Non-Intentional Stormwater Infiltration, Report No. EPA/600/R-94/051, USEPA (1994).

In addition, the distance of the groundwater table from the infiltration BMP may also be a factor determining the risk of contamination. A water table distance separation of ten feet depth in California presumptively poses negligible risk for storm water not associated with industrial activity or high vehicular traffic.

Infiltration BMPs are not recommended for areas of industrial activity or areas subject to high vehicular traffic (25,000 or greater average daily traffic (ADT) on main roadway or 15,000 or more ADT on any intersecting roadway) unless appropriate pretreatment is provided to ensure groundwater is protected and the infiltration BMP is not rendered ineffective by overload.

See Section 1.3 of this LID report for details.

2.14 Alternative Certification for Storm Water Treatment Mitigation

In lieu of conducting detailed BMP review to verify Structural or Treatment Control BMPs adequacy, a Permittee may elect to accept a signed certification from a Civil Engineer or a Licensed Architect registered in the State of California, that the plan meets the criteria established herein. The Permittee is encouraged to verify that certifying person(s) have been trained on BMP design for water quality, not more than two years prior to the signature date. Training conducted by an organization with storm water BMP design expertise (e.g., a University, American Society of Civil Engineers, American Society of Landscape Architects, American Public Works Association, or the California Water Environment Association) may be considered qualifying.

A California licensed civil engineer has provided a detailed BMP review of this report.

2.15 Resources and Reference

California Storm Water Best Management Practices Handbooks for New Development and Redevelopment (2003) and Industrial/Commercial (2014).

3.0 Low Impact Development

BMPs shall be implemented in the following order of preference:

1) **BMPs that promote infiltration**
   a) **Infiltration is feasible and the project will utilize an underground retention system**.

2) BMPs that store and beneficially use stormwater runoff

3) BMPs that utilize the runoff for other water conservation uses including, but not limited to, BMPs that incorporate vegetation to promote pollutant removal and runoff volume reduction and integrate multiple uses, and BMPs that percolate runoff through engineered soil and allow it to discharge downstream slowly.

APPENDIX A

SWQDv Calculations

Table 6-4: Infiltration Facility Safety Factor Determination Worksheet
DA 1

Factor Category		Factor Description	Assigned Weight (w)	Factor Value (v)	Product (p) p = w x v
A	Suitability Assessment	Soil assessment methods	0.25	1	0.25
		Predominant soil texture	0.25	1	0.25
		Site soil variability	0.25	1	0.25
		Depth to groundwater / impervious layer	0.25	2	0.50
		Suitability Assessment Safety Factor, $S_A = \Sigma p$			1.25
B	Design	Tributary area size	0.25	2	0.50
		Level of pretreatment/ expected sediment loads	0.25	1	0.25
		Redundancy	0.25	3	0.75
		Compaction during construction	0.25	1	0.25
		Design Safety Factor, $S_B = \Sigma p$			1.75
		Combined Safety Factor, $S_{TOT} = S_A \times S_B$			**2.1875**
Measured Infiltration Rate, in/hr					8.2
Design Infiltration Rate, in/hr					**3.75**

Note: The minimum combined adjustment factor shall not be less than 2.0 and the maximum combined adjustment factor shall not exceed 9.0.

FLOW-BASED BMP DESIGN (pretreatment)

$C_{BMP} = 0.858(imp)^3 - 0.78(imp)^2 + 0.774(imp) + 0.04$
i = 0.2 in/hr
SQDF = C * i * Area

DA 1 – BAR "A"

Drainage Area (acres)	**A =**	5.65	acres
Drainage Area (sq-ft)		**246,114**	sq-ft
Impervious Coeff		0.95	< 1.0
Runoff Coeff	**C =**	**0.81**	
Rainfall Intensity	**i =**	**0.2**	
Flow (cfs)	SQDF =	**0.91**	

ADS Barracuda S4
Q-required = 0.91 cfs
Q-provided = 1.25 cfs

Project Name: PentAir Site

STEP 5: APPLY BMPS TO REDUCE EIA TO <=5%

New development and redevelopment projects (Categories 1-6, 8, and 9) must reduce EIA to <=5%

Step 5a: Calculate Allowable EIA

EIA is defined as impervious area that is hydrologically connected via sheet flow over a hardened conveyance or impervious surface without any intervening medium to mitigate flow volume.

The allowable "EIA" for a project is calculated as:

$$EIA_{allowable} = (A_{project})*(\%_{allowable}) \quad \text{Equation 2-1}$$

Where:

$EIA_{allowable}$ = The maximum impervious area from which runoff can be treated and discharged offsite (and not retained onsite) [acres]

$A_{project}$ = The total project area [acres] [1]

$\%_{allowable}$ = 5 percent

Input:		**Units**
$A_{project}$ [1]	5.65	Acres
$\%_{allowable}$	5.00%	Percent
$EIA_{allowable}$	**0.28**	Acres

Step 5b: Calculate Impervious Area to be Retained

The impervious area from which runoff must be retained onsite is the total impervious area minus the EIA allowable, which should be calculated as follows:

$$A_{retain} = TIA - EIA_{allowable} = (IMP*A_{project}) - EIA_{allowable} \quad \text{Equation 2-2}$$

Where:

A_{retain} = the drainage area from which runoff must be retained [acres]

TIA = total impervious area [acres]

IMP = imperviousness of project area (%)

Input:		**Units**
Imperviousness	95.00%	
$A_{project}$ [1]	5.65	Acres
$EIA_{allowable}$	0.28	Acres
A_{retain}	**5.09**	Acres

Project Name: PentAir Site

BMPS TO REDUCE EIA TO <=5%, CONT.

Step 5c: Calculate the Volume to be Retained (SQDV)

The runoff volume that is to be retained onsite should be calculated using Equation 2-3 below:

$$V_{retain} = C*(0.75/12)*A_{retain}$$ Equation 2-3

Where:

V_{retain} = The stormwater quality design volume (SQDV) that must be retained onsite [ac-ft]

C = runoff coefficient (equals 0.95 for impervious surfaces)

Input:		**Units**
C	0.95	
A_{retain}	5.09	Acres
V_{retain}	0.302	ac-ft
	98,382.3	gallons
	13,151.7	cu.ft.

Continue to Step 5d

VOLUME-BASED BMP DESIGN

Design infiltration rate = 3.75 in/hr
d_{max} = 180 inches = Design infiltration rate x 48 hours = 3.75 in/hr x 48 hrs
d_{BMP} = 34.8 inches = [(6 inches + 6 inches) x 0.40] + 30 inches
$d_{max} > d_{BMP}$

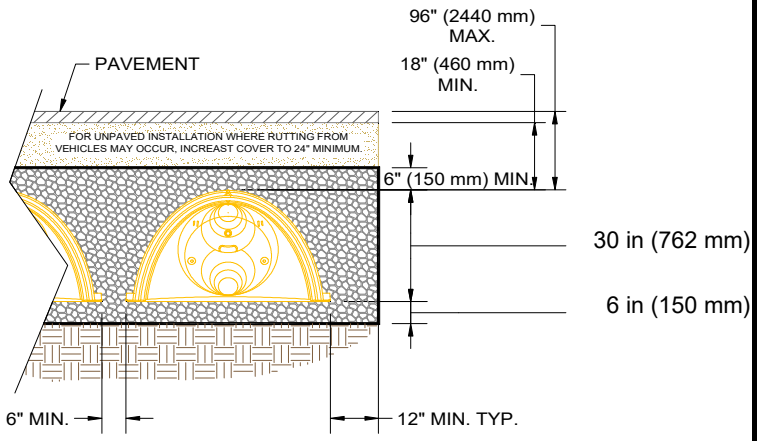
StormTech
Detention • Retention • Recharge
Subsurface Stormwater Management℠

Units: **Imperial**

Project: PentAir
By:
Point of Contact
Date:

System Requirements

Required Storage Volume	**13,152**	CF
Select Stormtech Chamber System	SC-740	
Stone Porosity (Industry Standard = 40%)	**40%**	
Stone Foundation Depth	6	Inches
Storage Volume Per Chamber	74.90	CF
Avg Cover over Chambers (18 in min. & 96 in max.)	18	Inches
Number of Chambers Required	176	Each
Required Bed Size	6,325	SF
Tons of Stone Required	729	Tons
Volume of Excavation	1,054	CY
Area of Filter Fabric	1,787	SY
# of End Caps Required	**18**	Each
Length of ISOLATOR ROW	**142.4**	FT
ISOLATOR FABRIC	**79**	SY



Is the limiting dimension for the bed the width or length? **width**

Controlled by Width (Rows)

Width	**45**	FT
# of Chambers Long	20	EA
# of Rows	9	EA
Actual Length	146.00	FT
Actual Width	44.25	FT

4 of the chambers rows will contain only 19 chambers

Controlled by Length

Length	**100**	FT
# of Chambers Long	-	EA
# of Rows	-	EA
Actual Length	-	FT
Actual Width	-	FT

Material Estimate

To use this sheet: Please enter data into the blue and green cells. If switching between Imperial and Metric units please check the correct units and data is input in the green cells.

Please call StormTech @ 888-892-2694 for conceptual cost estimates.

APPENDIX B

LID Site Plan



Last Update:1/11/22
O:\3800-3899\3885\3885VicMap.dwg

"VICINITY MAP"

FOR

PENTAIR SITE

Thienes Engineering, Inc.
CIVIL ENGINEERING • LAND SURVEYING
14349 FIRESTONE BOULEVARD
LA MIRADA, CALIFORNIA 90638
PH.(714)521-4811 FAX(714)521-4173

RAILROAD

EX 36" S.D.

INLET FOR OFFSITE RUN-ON

SD FOR OFFSITE RUN-ON

1A 0.40 AC

2A 1.35 AC

3A 0.45 AC

4A 0.65 AC

5A 1.05 AC

6B 0.20 AC

7B 0.30 AC

8B 0.25 AC

9B 0.40 AC

10C 0.25 AC

12E 0.05 AC

11D 0.30 AC

RD

INLET FOR OFFSITE RUN-ON

SD FOR OFFSITE RUN-ON

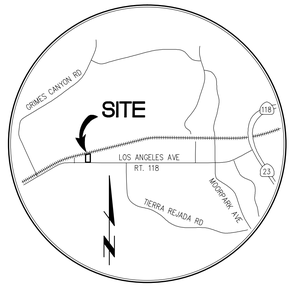
SD CONNECTION TO GABBERT CANYON CHANNEL

GABBERT CANYON CHANNEL

E. LOS ANGELES AVENUE

N.A.P.

N.A.P.



VICINITY MAP

N.T.S.

LEGEND

1. LOADING/UNLOADING DOCKS
2. LANDSCAPE/IRRIGATION
3. STORM DRAIN STENCIL: "NO DUMPING-DRAINS TO RIVER"
4. TRASH ENCLOSURE
5. STORMTECH SC-740 CHAMBERS FOR INFILTRATION
6. HYDRODYNAMIC SEPARATOR (MODEL SHOWN ON PLAN)

NOTES:

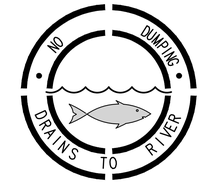
RD ROOF DRAIN

BOUNDARY

DRAINAGE AREAS

SURFACE FLOW DIRECTION

SD FLOW DIRECTION



SAMPLE STENCIL TO BE USED NEAR GRATE AND CURB OPENING INLETS

0 15 30 60 90

SCALE: 1"=30'

Last Update:5/24/22
G:\3800-3899\3885\3885BMPSITEMAP.dwg

CITY OF MOORPARK

PUBLIC WORKS DEPARTMENT

LID SITE MAP

PENTAIR

LOS ANGELES AVENUE MOORPARK, CA

3885/1 OF 2 SHEETS

PREPARED FOR:

AMIR DEVELOPMENT COMPANY
8730 WILSHIRE BOULEVARD, SUITE 300
BEVERLY HILLS, CA 90211
PHONE: (310) 657-8987

PREPARED BY:

Thienes Engineering, Inc.
CIVIL ENGINEERING • LAND SURVEYING
14349 FIRESTONE BOULEVARD
LA MIRADA, CALIFORNIA 90638
PH:(714)521-4811 FAX:(714)521-4173

Designed by _____ Date _____
Checked by _____ Date _____
Designed by _____ Date _____
Checked by _____ Date _____

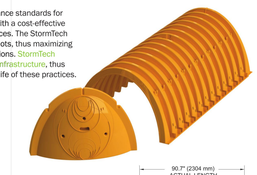
Approved by _____ Date _____

Public Works Director _____ R.C.E. _____

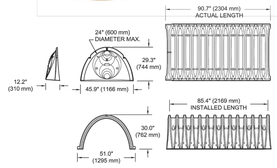
Sheet 1 of 2 Sheets

STORMTECH SC-740 CHAMBER

Designed to meet the most stringent industry performance standards for superior structural integrity while providing designers with a cost-effective method to save valuable land and protect water resources. The StormTech system is designed primarily to be used under parking lots, thus maximizing land usage for private (commercial) and public applications. StormTech chambers can also be used in conjunction with Green Infrastructure, thus enhancing the performance and extending the service life of these practices.



STORMTECH SC-740 CHAMBER
(not to scale)



Nominal Chamber Specifications

Size (L x W x H)
85.4" x 51" x 30"
2,170 mm x 1,295 mm x 762 mm

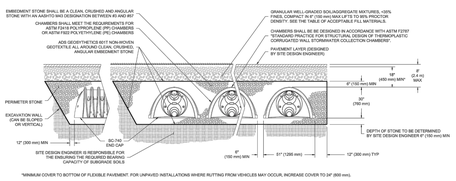
Chamber Storage
45.9 ft³ (1.30 m³)

Min. Installed Storage*
74.9 ft³ (2.12 m³)

Weight
74.0 lbs (33.6 kg)

Shipping
30 chambers/pallet
60 end caps/pallet
12 pallets/truck

*Assumes 6" (150 mm) stone above, below and between chambers and 40% stone porosity.



SC-740 CUMULATIVE STORAGE VOLUMES PER CHAMBER

Assumes 40% Stone Porosity. Calculations are Based Upon a 6" (150 mm) Stone Base Under Chambers.

Depth of Water in System Inches (mm)		Cumulative Chamber Storage ft³ (m³)	Total System Cumulative Storage ft³ (m³)
42 (1067)		45.90 (1.300)	74.90 (2.121)
41 (1041)		45.90 (1.300)	73.77 (2.089)
40 (1016)	Stone	45.90 (1.300)	72.64 (2.057)
39 (991)	Cover	45.90 (1.300)	71.52 (2.025)
38 (965)		45.90 (1.300)	70.39 (1.993)
37 (940)		45.90 (1.300)	69.26 (1.961)
36 (914)		45.90 (1.300)	68.14 (1.929)
35 (889)		45.85 (1.298)	66.98 (1.897)
34 (864)		45.69 (1.294)	65.75 (1.862)
33 (838)		45.41 (1.286)	64.46 (1.825)
32 (813)		44.81 (1.269)	62.97 (1.783)
31 (787)		44.01 (1.246)	61.36 (1.737)
30 (762)		43.06 (1.219)	59.66 (1.689)
29 (737)		41.98 (1.189)	57.89 (1.639)
28 (711)		40.80 (1.155)	56.05 (1.587)
27 (686)		39.54 (1.120)	54.17 (1.534)
26 (660)		38.16 (1.081)	52.23 (1.479)
25 (635)		36.74 (1.040)	50.23 (1.422)
24 (610)		35.22 (0.977)	48.19 (1.365)
23 (584)		33.64 (0.953)	46.11 (1.306)
22 (559)		31.99 (0.906)	44.00 (1.246)
21 (533)		30.29 (0.858)	1.85 (1.185)
20 (508)		28.54 (0.808)	39.67 (1.123)
19 (483)		26.74 (0.757)	37.47 (1.061)
18 (457)		24.89 (0.705)	35.23 (0.997)
17 (432)		23.00 (0.651)	32.96 (0.939)
16 (406)		21.06 (0.596)	30.68 (0.869)
15 (381)		19.09 (0.541)	28.36 (0.803)
14 (356)		17.08 (0.484)	26.03 (0.737)
13 (330)		15.04 (0.426)	23.68 (0.670)
12 (305)		12.97 (0.367)	21.31 (0.608)
11 (279)		10.87 (0.309)	18.92 (0.535)
10 (254)		8.74 (0.247)	16.51 (0.468)
9 (229)		6.58 (0.186)	14.09 (0.399)
8 (203)		4.41 (0.125)	11.66 (0.330)
7 (178)		2.21 (0.063)	9.21 (0.264)
6 (152)		0 (0)	6.78 (0.191)
5 (127)		0 (0)	5.63 (0.160)
4 (102)	Stone	0 (0)	4.51 (0.128)
3 (76)	Foundation	0 (0)	3.38 (0.096)
2 (51)		0 (0)	2.25 (0.064)
1 (25)		0 (0)	1.13 (0.032)

Note: Add 1.13 ft³ (0.032 m³) of storage for each additional inch (25 mm) of stone foundation.

STORAGE VOLUME PER CHAMBER FT³ (M³)

	Bare Chamber Storage ft³ (m³)	Chamber and Stone Foundation Depth in. (mm)		
		6 (150)	12 (300)	18 (450)
SC-740 Chamber	45.9 (1.3)	74.9 (2.1)	81.7 (2.3)	88.4 (2.5)

Note: Assumes 6" (150 mm) stone above chambers, 6" (150 mm) row spacing and 40% stone porosity.

AMOUNT OF STONE PER CHAMBER

ENGLISH TONS (yds³)	Stone Foundation Depth		
	6"	12"	18"
SC-740	3.8 (2.8)	4.6 (3.3)	5.5 (3.9)
METRIC KILOGRAMS (m³)	150 mm	300 mm	450 mm
SC-740	3,450 (2.1)	4,170 (2.5)	4,490 (3.0)

Note: Assumes 6" (150 mm) of stone above and between chambers.

VOLUME EXCAVATION PER CHAMBER YD³ (M³)

	Stone Foundation Depth		
	6 (150)	12 (300)	18 (450)
SC-740	5.5 (4.2)	6.2 (4.7)	6.8 (5.2)

Note: Assumes 6" (150 mm) of row separation and 18" (450 mm) of cover. The volume of excavation will vary as depth of cover increases.

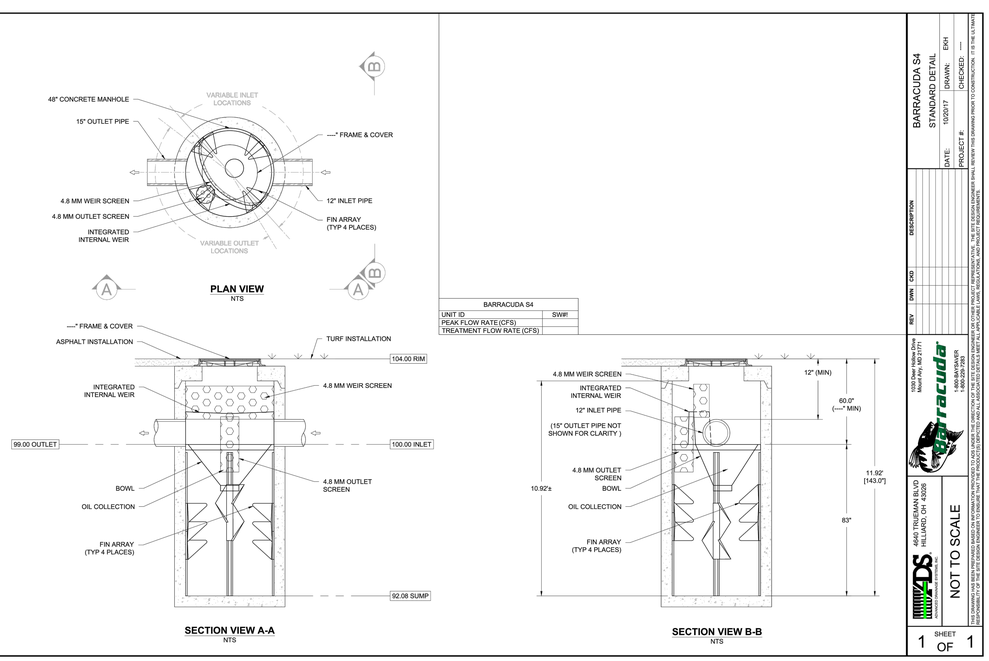
Working on a project?
Visit us at www.stormtech.com
and utilize the StormTech Design Tool

For more information on the StormTech SC-740 Chamber and other ADS products, please contact our Customer Service Representatives at 1-800-821-6710

THE MOST ADVANCED NAME IN WATER MANAGEMENT SOLUTIONS™

ADS "Terms and Conditions of Sale" are available on the ADS website, www.ads-pipe.com
The ADS logo and the Green Stripe are registered trademarks of Advanced Drainage Systems, Inc.
StormTech® is a registered trademark of StormTech, Inc.
© 2017 Advanced Drainage Systems, Inc. # 516 09/0508 09/17 CS

Advanced Drainage Systems, Inc.
4640 Trueman Blvd., Hilliard, OH 43026
1-800-821-6710 www.ads-pipe.com



BARRACUDA S4
STANDARD DETAIL
DATE: 10/20/17
PROJECT #:
DRAWN: EKH
CHECKED: —
REV | DWN | CKD | DESCRIPTION

THIS DRAWING AND SPECIFICATIONS, AS AN INSTRUMENT OF SERVICE, IS AND SHALL REMAIN THE PROPERTY OF STORMTECH. THEY ARE NOT TO BE USED IN WHOLE OR IN PART FOR ANY PROJECT OTHER THAN THE ONE FOR WHICH THEY HAVE BEEN PREPARED BASED UPON INFORMATION PROVIDED TO AND RELIED UPON BY STORMTECH. ALL OF STORMTECH'S DESIGNS ARE PRELIMINARY UNTIL THE SITE DESIGN ENGINEER OF RECORD SIGNS AND SEALS THE DRAWING FOR CONSTRUCTION. IT IS THE ULTIMATE RESPONSIBILITY OF THE SITE DESIGN ENGINEER TO REVIEW THIS DRAWING PRIOR TO CONSTRUCTION. IT IS THE ULTIMATE RESPONSIBILITY OF THE SITE DESIGN ENGINEER TO ENSURE THAT THE DESIGN MEETS ALL LOCAL, STATE AND FEDERAL REGULATIONS. THE SITE DESIGN ENGINEER SHALL REVIEW THIS DRAWING PRIOR TO CONSTRUCTION. IT IS THE ULTIMATE RESPONSIBILITY OF THE SITE DESIGN ENGINEER TO ENSURE THAT THE DESIGN MEETS ALL LOCAL, STATE AND FEDERAL REGULATIONS. THE SITE DESIGN ENGINEER SHALL REVIEW THIS DRAWING PRIOR TO CONSTRUCTION. IT IS THE ULTIMATE RESPONSIBILITY OF THE SITE DESIGN ENGINEER TO ENSURE THAT THE DESIGN MEETS ALL LOCAL, STATE AND FEDERAL REGULATIONS.

1000 Dell Valley Drive
Mount Airy, MD 21771

LAST REVISED BY
1-800-295-7283

4640 TRUEMAN BLVD
HILLIARD, OH 43026

NOT TO SCALE

SHEET 1 OF 1

Last Update:5/24/22
G:\3800-3899\3885\3885MPSITEMAP.dwg

CITY OF MOORPARK
PUBLIC WORKS DEPARTMENT

LID SITE MAP

PENTAIR
LOS ANGELES AVENUE
MOORPARK, CA

3885/2 OF 2 SHEETS

PREPARED FOR:
AMIR DEVELOPMENT COMPANY
8730 WILSHIRE BOULEVARD, SUITE 300
BEVERLY HILLS, CA 90211
PHONE: (310) 657-8987

PREPARED BY:
Thienes Engineering, Inc.
CIVIL ENGINEERING • LAND SURVEYING
14349 FIRESTONE BOULEVARD
LA MIRADA, CALIFORNIA 90638
PH:(714)521-4811 FAX(714)521-4173

Designed by _____ Date _____
Checked by _____ Date _____
Designed by _____ Date _____
Checked by _____ Date _____

Approved by _____ Date _____

Public Works Director _____ R.C.E. _____

Sheet 2 of 2 Sheets

APPENDIX C

BMP Operation and Maintenance

BMP Operation and Maintenance			
BMP	**Operation/Maintenance**	**Inspection Frequency**	**Responsibility**
Storm Drain Stencil and Signage	➢ Visually inspect for legibility and replace/repaint as necessary.	Annually	Owner
Parking Lot Sweeping	➢ At a minimum, sweep on a monthly basis.	Monthly (minimum)	Owner
Underground Chambers	➢ The isolator row shall be inspected semi-annually (October 1st and February 1st) and maintained once sediment depth is greater than 3-inches. The isolator row shall be inspected and maintained by a qualified technician and he/she will properly dispose of all wastes. A manhole is installed in order to inspect and maintain the isolator row. It is installed per OSHA codes to ensure operator and inspector safety.	Semi-annually (October 1st and February 1st) through maintenance service contract with the vendor or equally qualified contractor.	Owner
Hydrodynamic Separator	➢ Open access hatches or manholes. Remove gross solids from screening basket upon reaching 25% capacity. Hinges open the bottom screen panels to access sedimentation chambers. Vacuum out sedimentation chamber when any chamber reaches 25% capacity.	Inspected semi-annually (by October 1st and February 1st) and maintained, upon reaching 25% capacity, through maintenance service contract with the vendor or equally qualified contractor.	Owner
Maintenance Log	➢ Keep a log of all inspection and maintenance performed on the above mentioned BMPs for at least 5 years. Keep this log on-site.	Ongoing	Owner

I.10 Proprietary Device Inspection and Maintenance Checklist

Date:_____ Work Order # _____

Type of Inspection: □ post-storm □ annual □ routine □ post-wet season □ pre-wet season

Facility:_____ Inspector(s): _____

Defect	Conditions When Maintenance Is Needed	Inspection Result (0,1, or 2) †	Date Maintenance Performed	Comments or Action(s) taken to resolve issue
Refer to the manufacturer's instructions for maintenance/inspection requirements, below are generic guidelines to supplement manufacturer's recommendations.				
Underground Vault				
Sediment Accumulation on Media	Sediment depth exceeds 0.25-inches.			
Sediment Accumulation in Vault	Sediment depth exceeds 6-inches in first chamber.			
Trash/Debris Accumulation	Trash and debris accumulated on compost filter bed.			
Sediment in Drain Pipes or Cleanouts	When drain pipes, clean-outs, become full with sediment and/or debris.			
Damaged Pipes	Any part of the pipes that are crushed or damaged due to corrosion and/or settlement.			
Access Cover Damaged/Not Working	Cover cannot be opened; one person cannot open the cover using normal lifting pressure, corrosion/deformation of cover.			
Vault Structure Includes Cracks in Wall, Bottom, Damage to	Cracks wider than 1/2-inch or evidence of soil particles entering the structure through the cracks, or maintenance/inspection personnel determine that the vault is not structurally sound.			

Defect	Conditions When Maintenance Is Needed	Inspection Result (0,1, or 2) †	Date Maintenance Performed	Comments or Action(s) taken to resolve issue
Frame and/or Top Slab	Cracks wider than 1/2-inch at the joint of any inlet/outlet pipe or evidence of soil particles entering through the cracks.			
Baffles	Baffles corroding, cracking warping, and/or showing signs of failure as determined by maintenance/inspection person.			
Access Ladder Damaged	Ladder is corroded or deteriorated, not functioning properly, not securely attached to structure wall, missing rungs, cracks, or misaligned.			
Below Ground Cartridge Type				
Filter Media	Drawdown of water through the media takes longer than 1 hour and/or overflow occurs frequently.			
Short Circuiting	Flows do not properly enter filter cartridges.			

†Maintenance: Enter 0 if satisfactory, 1 if maintenance is needed and include WO#. Enter 2 if maintenance was performed same day.

Storm Drain Signage SD-13



Design Objectives

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Land Coverage
- ☑ Prohibit Dumping of Improper Materials
- Contain Pollutants
- Collect and Convey

Description

Waste materials dumped into storm drain inlets can have severe impacts on receiving and ground waters. Posting notices regarding discharge prohibitions at storm drain inlets can prevent waste dumping. Storm drain signs and stencils are highly visible source controls that are typically placed directly adjacent to storm drain inlets.

Approach

The stencil or affixed sign contains a brief statement that prohibits dumping of improper materials into the urban runoff conveyance system. Storm drain messages have become a popular method of alerting the public about the effects of and the prohibitions against waste disposal.

Suitable Applications

Stencils and signs alert the public to the destination of pollutants discharged to the storm drain. Signs are appropriate in residential, commercial, and industrial areas, as well as any other area where contributions or dumping to storm drains is likely.

Design Considerations

Storm drain message markers or placards are recommended at all storm drain inlets within the boundary of a development project. The marker should be placed in clear sight facing toward anyone approaching the inlet from either side. All storm drain inlet locations should be identified on the development site map.

Designing New Installations

The following methods should be considered for inclusion in the project design and show on project plans:

- Provide stenciling or labeling of all storm drain inlets and catch basins, constructed or modified, within the project area with prohibitive language. Examples include “NO DUMPING

CASQA
CALIFORNIA STORMWATER QUALITY ASSOCIATION

– DRAINS TO OCEAN" and/or other graphical icons to discourage illegal dumping.

- Post signs with prohibitive language and/or graphical icons, which prohibit illegal dumping at public access points along channels and creeks within the project area.

Note - Some local agencies have approved specific signage and/or storm drain message placards for use. Consult local agency stormwater staff to determine specific requirements for placard types and methods of application.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. If the project meets the definition of "redevelopment", then the requirements stated under " designing new installations" above should be included in all project design plans.

Additional Information

Maintenance Considerations

- Legibility of markers and signs should be maintained. If required by the agency with jurisdiction over the project, the owner/operator or homeowner's association should enter into a maintenance agreement with the agency or record a deed restriction upon the property title to maintain the legibility of placards or signs.

Placement

- Signage on top of curbs tends to weather and fade.

- Signage on face of curbs tends to be worn by contact with vehicle tires and sweeper brooms.

Supplemental Information

Examples

- Most MS4 programs have storm drain signage programs. Some MS4 programs will provide stencils, or arrange for volunteers to stencil storm drains as part of their outreach program.

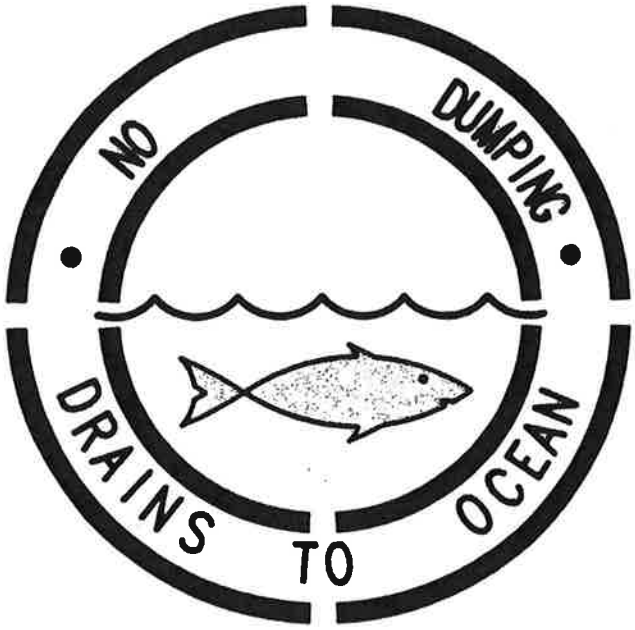
Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.



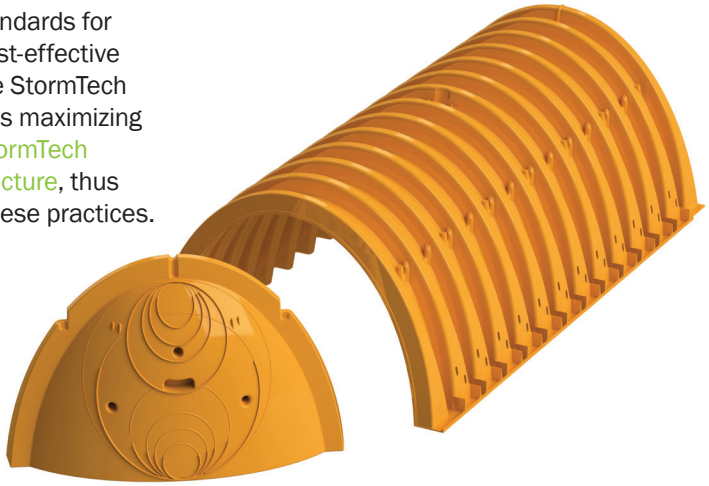
SAMPLE STENCIL TO BE USED NEAR
GRATE AND CURB OPENING INLETS
SYMBOL TO BE 24" IN DIAMETER

Thienes Engineering
CIVIL ENGINEERING • LAND SURVEYING
14349 FIRESTONE BOULEVARD
LA MIRADA, CALIFORNIA 90638
PH.(714)521-4811 FAX(714)521-4173

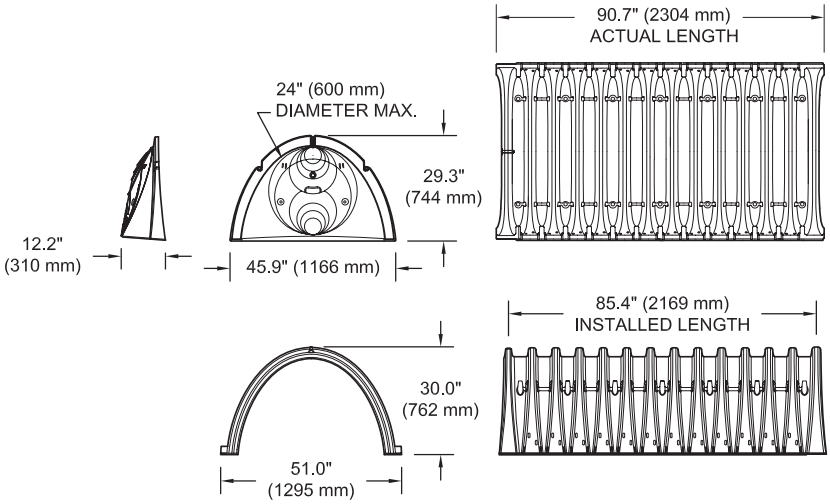
SAMPLE CATCH BASIN STENCIL
PER BMP SD-13

STORMTECH SC-740 CHAMBER

Designed to meet the most stringent industry performance standards for superior structural integrity while providing designers with a cost-effective method to save valuable land and protect water resources. The StormTech system is designed primarily to be used under parking lots, thus maximizing land usage for private (commercial) and public applications. StormTech chambers can also be used in conjunction with Green Infrastructure, thus enhancing the performance and extending the service life of these practices.



STORMTECH SC-740 CHAMBER
(not to scale)



Nominal Chamber Specifications

Size (L x W x H)
85.4" x 51" x 30"
2,170 mm x 1,295 mm x 762 mm

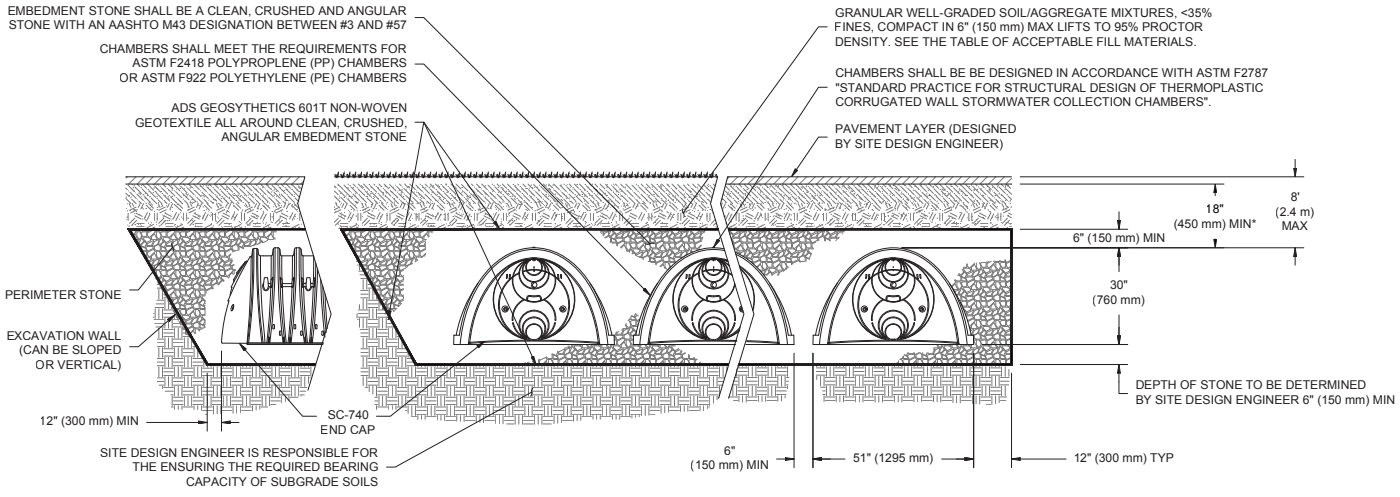
Chamber Storage
45.9 ft³ (1.30 m³)

Min. Installed Storage*
74.9 ft³ (2.12 m³)

Weight
74.0 lbs (33.6 kg)

Shipping
30 chambers/pallet
60 end caps/pallet
12 pallets/truck

*Assumes 6" (150 mm) stone above, below and between chambers and 40% stone porosity.



*MINIMUM COVER TO BOTTOM OF FLEXIBLE PAVEMENT. FOR UNPAVED INSTALLATIONS WHERE RUTTING FROM VEHICLES MAY OCCUR, INCREASE COVER TO 24" (600 mm).

SC-740 CUMULATIVE STORAGE VOLUMES PER CHAMBER

Assumes 40% Stone Porosity. Calculations are Based Upon a 6" (150 mm) Stone Base Under Chambers.

Depth of Water in System Inches (mm)		Cumulative Chamber Storage ft³ (m³)	Total System Cumulative Storage ft³ (m³)
42 (1067)		45.90 (1.300)	74.90 (2.121)
41 (1041)		45.90 (1.300)	73.77 (2.089)
40 (1016)	Stone	45.90 (1.300)	72.64 (2.057)
39 (991)	Cover	45.90 (1.300)	71.52 (2.025)
38 (965)		45.90 (1.300)	70.39 (1.993)
37 (940)		45.90 (1.300)	69.26 (1.961)
36 (914)		45.90 (1.300)	68.14 (1.929)
35 (889)		45.85 (1.298)	66.98 (1.897)
34 (864)		45.69 (1.294)	65.75 (1.862)
33 (838)		45.41 (1.286)	64.46 (1.825)
32 (813)		44.81 (1.269)	62.97 (1.783)
31 (787)		44.01 (1.246)	61.36 (1.737)
30 (762)		43.06 (1.219)	59.66 (1.689)
29 (737)		41.98 (1.189)	57.89 (1.639)
28 (711)		40.80 (1.155)	56.05 (1.587)
27 (686)		39.54 (1.120)	54.17 (1.534)
26 (660)		38.18 (1.081)	52.23 (1.479)
25 (635)		36.74 (1.040)	50.23 (1.422)
24 (610)		35.22 (0.977)	48.19 (1.365)
23 (584)		33.64 (0.953)	46.11 (1.306)
22 (559)		31.99 (0.906)	44.00 (1.246)
21 (533)		30.29 (0.858)	1.85 (1.185)
20 (508)		28.54 (0.808)	39.67 (1.123)
19 (483)		26.74 (0.757)	37.47 (1.061)
18 (457)		24.89 (0.705)	35.23 (0.997)
17 (432)		23.00 (0.651)	32.96 (0.939)
16 (406)		21.06 (0.596)	30.68 (0.869)
15 (381)		19.09 (0.541)	28.36 (0.803)
14 (356)		17.08 (0.484)	26.03 (0.737)
13 (330)		15.04 (0.426)	23.68 (0.670)
12 (305)		12.97 (0.367)	21.31 (0.608)
11 (279)		10.87 (0.309)	18.92 (0.535)
10 (254)		8.74 (0.247)	16.51 (0.468)
9 (229)		6.58 (0.186)	14.09 (0.399)
8 (203)		4.41 (0.125)	11.66 (0.330)
7 (178)		2.21 (0.063)	9.21 (0.264)
6 (152)		0 (0)	6.76 (0.191)
5 (127)		0 (0)	5.63 (0.160)
4 (102)	Stone	0 (0)	4.51 (0.128)
3 (76)	Foundation	0 (0)	3.38 (0.096)
2 (51)		0 (0)	2.25 (0.064)
1 (25)		0 (0)	1.13 (0.032)

Note: Add 1.13 ft³ (0.032 m³) of storage for each additional inch (25 mm) of stone foundation.

STORAGE VOLUME PER CHAMBER FT³ (M³)

	Bare Chamber Storage ft³ (m³)	Chamber and Stone Foundation Depth in. (mm)		
		6 (150)	12 (300)	18 (450)
SC-740 Chamber	45.9 (1.3)	74.9 (2.1)	81.7 (2.3)	88.4 (2.5)

Note: Assumes 6" (150 mm) stone above chambers, 6" (150 mm) row spacing and 40% stone porosity.

AMOUNT OF STONE PER CHAMBER

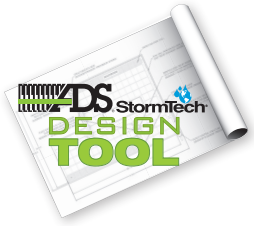
ENGLISH TONS (yds³)	Stone Foundation Depth		
	6"	12"	16"
SC-740	3.8 (2.8)	4.6 (3.3)	5.5 (3.9)
METRIC KILOGRAMS (m³)	**150 mm**	**300 mm**	**450 mm**
SC-740	3,450 (2.1)	4,170 (2.5)	4,490 (3.0)

Note: Assumes 6" (150 mm) of stone above and between chambers.

VOLUME EXCAVATION PER CHAMBER YD³ (M³)

	Stone Foundation Depth		
	6 (150)	12 (300)	18 (450)
SC-740	5.5 (4.2)	6.2 (4.7)	6.8 (5.2)

Note: Assumes 6" (150 mm) of row separation and 18" (450 mm) of cover. The volume of excavation will vary as depth of cover increases.



Working on a project?
Visit us at www.stormtech.com
and utilize the StormTech Design Tool

For more information on the StormTech SC-740 Chamber and other ADS products, please contact our Customer Service Representatives at 1-800-821-6710

*THE MOST **ADVANCED** NAME IN WATER MANAGEMENT SOLUTIONS™*

Advanced Drainage Systems, Inc.
4640 Trueman Blvd., Hilliard, OH 43026
1-800-821-6710 www.ads-pipe.com

ADS "Terms and Conditions of Sale" are available on the ADS website, www.ads-pipe.com
The ADS logo and the Green Stripe are registered trademarks of Advanced Drainage Systems, Inc.
StormTech® is a registered trademark of StormTech, Inc.
© 2017 Advanced Drainage Systems, Inc. # S16 090508 09/17 CS

StormTech
Detention • Retention • Water Quality
An ADS company

Isolator® Row O&M Manual







THE MOST ADVANCED NAME IN WATER MANAGEMENT SOLUTIONS™

ADS®

THE ISOLATOR® ROW

INTRODUCTION

An important component of any Stormwater Pollution Prevention Plan is inspection and maintenance. The StormTech Isolator Row is a technique to inexpensively enhance Total Suspended Solids (TSS) removal and provide easy access for inspection and maintenance.

THE ISOLATOR ROW

The Isolator Row is a row of StormTech chambers, either SC-160LP, SC-310, SC-310-3, SC-740, DC-780, MC-3500 or MC-4500 models, that is surrounded with filter fabric and connected to a closely located manhole for easy access. The fabric-wrapped chambers provide for settling and filtration of sediment as storm water rises in the Isolator Row and ultimately passes through the filter fabric. The open bottom chambers and perforated sidewalls (SC-310, SC- 310-3 and SC-740 models) allow storm water to flow both vertically and horizontally out of the chambers. Sediments are captured in the Isolator Row protecting the storage areas of the adjacent stone and chambers from sediment accumulation.

Two different fabrics are used for the Isolator Row. A woven geotextile fabric is placed between the stone and the Isolator Row chambers. The tough geotextile provides a media for storm water filtration and provides a durable surface for maintenance operations. It is also designed to prevent scour of the underlying stone and remain intact during high pressure jetting. A non-woven fabric is placed over the chambers to provide a filter media for flows passing through the perforations in the sidewall of the chamber. The non-woven fabric is not required over the SC-160LP, DC-780, MC-3500 or MC-4500 models as these chambers do not have perforated side walls.

The Isolator Row is typically designed to capture the “first flush” and offers the versatility to be sized on a volume basis or flow rate basis. An upstream manhole not only provides access to the Isolator Row but typically includes a high flow weir such that storm water flowrates or volumes that exceed the capacity of the Isolator Row overtop the over flow weir and discharge through a manifold to the other chambers.

The Isolator Row may also be part of a treatment train. By treating storm water prior to entry into the chamber system, the service life can be extended and pollutants such as hydrocarbons can be captured. Pre-treatment best management practices can be as simple as deep sump catch basins, oil-water separators or can be innovative storm water treatment devices. The design of the treatment train and selection of pretreatment devices by the design engineer is often driven by regulatory requirements. Whether pretreatment is used or not, the Isolator Row is recommended by StormTech as an effective means to minimize maintenance requirements and maintenance costs.

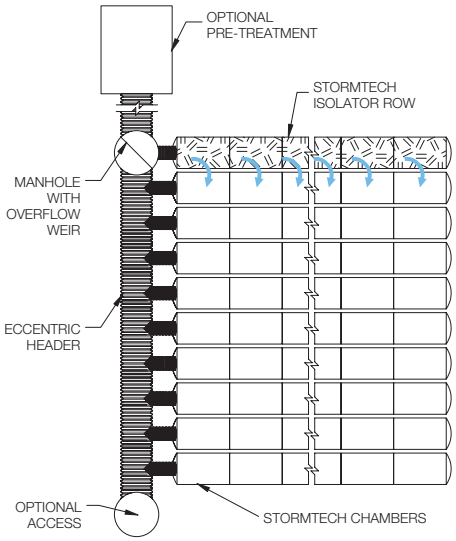
Note: See the StormTech Design Manual for detailed information on designing inlets for a StormTech system, including the Isolator Row.



Looking down the Isolator Row from the manhole opening, woven geotextile is shown between the chamber and stone base.



StormTech Isolator Row with Overflow Spillway (not to scale)





ISOLATOR ROW INSPECTION/MAINTENANCE

INSPECTION

The frequency of inspection and maintenance varies by location. A routine inspection schedule needs to be established for each individual location based upon site specific variables. The type of land use (i.e. industrial, commercial, residential), anticipated pollutant load, percent imperviousness, climate, etc. all play a critical role in determining the actual frequency of inspection and maintenance practices.

At a minimum, StormTech recommends annual inspections. Initially, the Isolator Row should be inspected every 6 months for the first year of operation. For subsequent years, the inspection should be adjusted based upon previous observation of sediment deposition.

The Isolator Row incorporates a combination of standard manhole(s) and strategically located inspection ports (as needed). The inspection ports allow for easy access to the system from the surface, eliminating the need to perform a confined space entry for inspection purposes.

If upon visual inspection it is found that sediment has accumulated, a stadia rod should be inserted to determine the depth of sediment. When the average depth of sediment exceeds 3 inches throughout the length of the Isolator Row, clean-out should be performed.

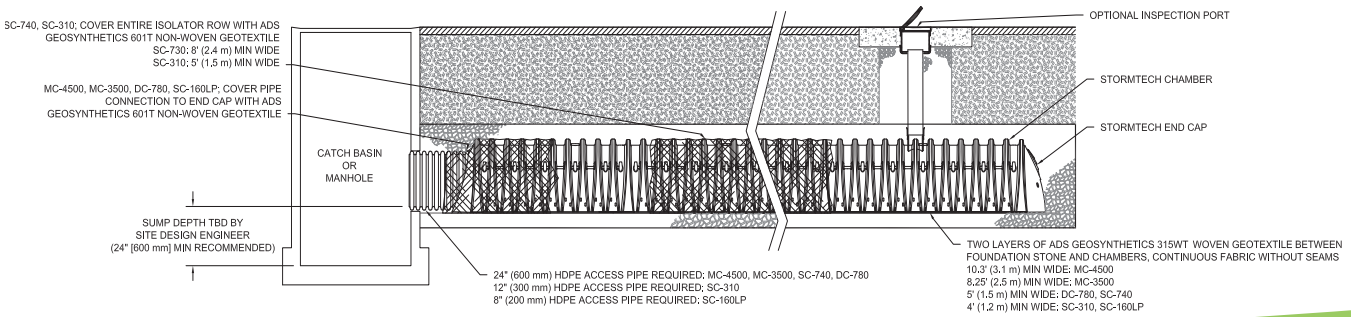
MAINTENANCE

The Isolator Row was designed to reduce the cost of periodic maintenance. By "isolating" sediments to just one row, costs are dramatically reduced by eliminating the need to clean out each row of the entire storage bed. If inspection indicates the potential need for maintenance, access is provided via a manhole(s) located on the end(s) of the row for cleanout. If entry into the manhole is required, please follow local and OSHA rules for a confined space entries.

Maintenance is accomplished with the JetVac process. The JetVac process utilizes a high pressure water nozzle to propel itself down the Isolator Row while scouring and suspending sediments. As the nozzle is retrieved, the captured pollutants are flushed back into the manhole for vacuuming. Most sewer and pipe maintenance companies have vacuum/JetVac combination vehicles. Selection of an appropriate JetVac nozzle will improve maintenance efficiency. Fixed nozzles designed for culverts or large diameter pipe cleaning are preferable. Rear facing jets with an effective spread of at least 45" are best. Most JetVac reels have 400 feet of hose allowing maintenance of an Isolator Row up to 50 chambers long. **The JetVac process shall only be performed on StormTech Isolator Rows that have AASHTO class 1 woven geotextile (as specified by StormTech) over their angular base stone.**

StormTech Isolator Row (not to scale)

Note: Non-woven fabric is only required over the inlet pipe connection into the end cap for SC-160LP, DC-780, MC-3500 and MC-4500 chamber models and is not required over the entire Isolator Row.



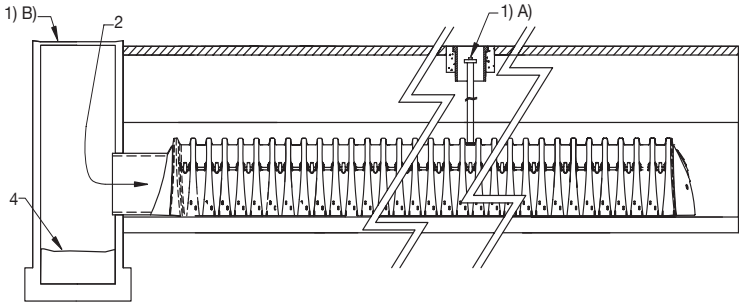
ISOLATOR ROW STEP BY STEP MAINTENANCE PROCEDURES

STEP 1
Inspect Isolator Row for sediment.
- A) Inspection ports (if present)
  - i. Remove lid from floor box frame
  - ii. Remove cap from inspection riser
  - iii. Using a flashlight and stadia rod,measure depth of sediment and record results on maintenance log.
  - iv. If sediment is at or above 3 inch depth, proceed to Step 2. If not, proceed to Step 3.
- B) All Isolator Rows
  - i. Remove cover from manhole at upstream end of Isolator Row
  - ii. Using a flashlight, inspect down Isolator Row through outlet pipe
    1. Mirrors on poles or cameras may be used to avoid a confined space entry
    2. Follow OSHA regulations for confined space entry if entering manhole
  - iii. If sediment is at or above the lower row of sidewall holes (approximately 3 inches), proceed to Step 2. If not, proceed to Step 3.

STEP 2
Clean out Isolator Row using the JetVac process.
- A) A fixed floor cleaning nozzle with rear facing nozzle spread of 45 inches or more is preferable
- B) Apply multiple passes of JetVac until backflush water is clean
- C) Vacuum manhole sump as required

STEP 3
Replace all caps, lids and covers, record observations and actions.

STEP 4
Inspect & clean catch basins and manholes upstream of the StormTech system.



SAMPLE MAINTENANCE LOG

Date	Stadia Rod Readings		Sediment Depth (1)–(2)	Observations/Actions	Inspector
	Fixed point to chamber bottom (1)	Fixed point to top of sediment (2)			
3/15/11	6.3 ft	none		New installation. Fixed point is CI frame at grade	DJM
9/24/11		6.2	0.1 ft	Some grit felt	SM
6/20/13		5.8	0.5 ft	Mucky feel, debris visible in manhole and in Isolator Row, maintenance due	NV
7/7/13	6.3 ft		0	System jetted and vacuumed	DJM

ADS "Terms and Conditions of Sale" are available on the ADS website, www.ads-pipe.com
The ADS logo and the Green Stripe are registered trademarks of Advanced Drainage Systems, Inc.
Stormtech® and the Isolator® Row are registered trademarks of StormTech, Inc.
© 2017 Advanced Drainage Systems, Inc. #11011 03/17 CS

StormTech® Detention • Retention • Water Quality
A division of ADS

Advanced Drainage Systems, Inc.
4640 Trueman Blvd., Hilliard, OH 43026
1-800-821-6710 www.ads-pipe.com

Maintenance Guide

BaySaver Barracuda™

July 2017

One of the advantages of the BaySaver Barracuda is the ease of maintenance. Like any system that collects pollutants, the BaySaver Barracuda must be maintained for continued effectiveness. Maintenance is a simple procedure performed using a vacuum truck or similar equipment. The systems were designed to minimize the volume of water removed during routine maintenance, reducing disposal costs.

Contractors can access the pollutants stored in the manhole through the manhole cover. This allows them to gain vacuum hose access to the bottom of the manhole to remove sediment and trash. There is no confined space entry necessary for inspection or maintenance.

The entire maintenance procedure typically takes from 2 to 4 hours, depending on the size of the system, the captured material, and the capacity of the vacuum truck.

Local regulations may apply to the maintenance procedure. Safe and legal disposal of pollutants is the responsibility of the maintenance contractor. Maintenance should be performed only by a qualified contractor.

Inspection and Cleaning Cycle

Periodic inspection is needed to determine the need for and frequency of maintenance. You should begin inspecting as soon as construction is complete and thereafter on an annual basis. Typically, the system needs to be cleaned every 1-3 years.

Excessive oils, fuels or sediments may reduce the maintenance cycle. Periodic inspection is important.

Determining When to Clean

To determine the sediment depth, the maintenance contractor should lower a stadia rod into the manhole until it contacts the top of the captured sediment and mark that spot on the rod. Then push the probe through to the bottom of the sump and mark that spot to determine sediment depth.

Maintenance should occur when the sediment has reached the levels indicated in the Storage Capacity Chart.

BaySaver Barracuda Storage Capacities

Model	Manhole Diameter	Treatment Chamber Capacity	Standard Sediment Capacity (20" depth)	NJDEP Sediment Capacity (50% of standard depth)
S3	36"	212 gallons	0.44 cubic yards	0.22 cubic yards
S4	48"	564 gallons	0.78 cubic yards	0.39 cubic yards
S5	60"	881 gallons	1.21 cubic yards	0.61 cubic yards
S6	72"	1269 gallons	1.75 cubic yards	0.88 cubic yards
S8	96"	3835 gallons	3.10 cubic yards	1.55 cubic yards
S10	120"	7496 gallons	4.85 cubic yards	2.43 cubic yards

Maintenance Instructions

1. Remove the manhole cover to provide access to the pollutant storage. Pollutants are stored in the sump, below the bowl assembly visible from the surface. You'll access this area through the 10" diameter access cylinder.

©ADS 2017

2. Use a vacuum truck or other similar equipment to remove all water, debris, oils and sediment. See figure 1.
3. Use a high pressure hose to clean the manhole of all the remaining sediment and debris. Then, use the vacuum truck to remove the water.
4. Fill the cleaned manhole with water until the level reaches the invert of the outlet pipe.
5. Replace the manhole cover.
6. Dispose of the polluted water, oils, sediment and trash at an approved facility.
   - Local regulations prohibit the discharge of solid material into the sanitary system. Check with the local sewer authority for authority to discharge the liquid.
   - Some localities treat the pollutants as leachate. Check with local regulators about disposal requirements.
   - Additional local regulations may apply to the maintenance procedure.

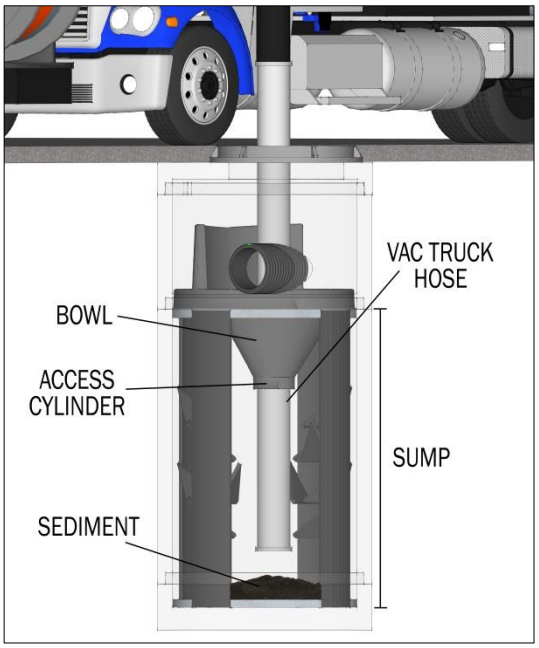


Figure 1

©ADS 2017

APPENDIX D

Maintenance and Covenant Agreement

(Long Form)

Recorded at the request of:

City of Moorpark

After recording, return to:

City of Moorpark

City Clerk

Stormwater Treatment Device Access and Maintenance Agreement

OWNER: Amir Development Company

PROPERTY ADDRESS: 10951 West Los Angeles Avenue, Moorpark, CA 93021

APN:

THIS AGREEMENT is made and entered into in _____, California, this ___ day of _____, by and between Amir Development Company _____, hereinafter referred to as "Owner" and the CITY OF Moorpark _____, a municipal corporation, located in the County of Ventura, State of California hereinafter referred to as "CITY";

WHEREAS, the Owner owns real property ("Property") in the City of Moorpark , County of Ventura, State of California, more specifically described in Exhibit "A" and depicted in Exhibit "B", each of which exhibits is attached hereto and incorporated herein by this reference;

WHEREAS, at the time of initial approval of development project known as PentAir Site within the Property described herein, the City required the project to employ on-site control measures to minimize pollutants in urban runoff;

WHEREAS, the Owner has chosen to install a set of underground infiltration chambers and a hydrodynamic separator hereinafter referred to as "Device", as the on-site control measure to minimize pollutants in urban runoff;

WHEREAS, said Device has been installed in accordance with plans and specifications accepted by the City;

WHEREAS, said Device, with installation on private property and draining only private property, is a private facility with all maintenance or replacement, therefore, the sole responsibility of the Owner in accordance with the terms of this Agreement;

WHEREAS, the Owner is aware that periodic and continuous maintenance, including, but not necessarily limited to, filter material replacement and sediment removal, is required to assure peak performance of Device and that, furthermore, such maintenance activity will require compliance with all Local, State, or Federal laws and regulations, including those pertaining to confined space and waste disposal methods, in effect at the time such maintenance occurs;

NOW THEREFORE, it is mutually stipulated and agreed as follows:

1) Owner hereby provides the City of City's designee complete access, of any duration, to the Device and its immediate vicinity at any time, upon reasonable notice, or in the event of emergency, as determined by City's Director of Public Works no advance notice, for the purpose of inspection, sampling, testing of the Device, and in case of emergency, to undertake all necessary repairs or other preventative measures at owner's expense as provided in paragraph 3 below. City shall make every effort at all times to minimize or avoid interference with Owner's use of the Property.

2) Owner shall use its best efforts diligently to maintain the Device in a manner assuring peak performance at all times. All reasonable precautions shall be exercised by Owner and Owner's representative or contractor in the removal and extraction of material(s) from the Device and the ultimate disposal of the material(s) in a manner consistent with all relevant laws and regulations in effect at the time. As may be requested from time to time by the City, the Owner shall provide the City with documentation identifying the material(s) removed, the quantity, and disposal destination.

3) In the event Owner, or its successors or assigns, fails to accomplish the necessary maintenance contemplated by this Agreement, within five (5) days of being given written notice by the City, the City is hereby authorized to cause any maintenance necessary to be done and charge the entire cost and expense to the Owner or Owner's successors or assigns, including administrative costs, attorney's fees and interest thereon at the maximum rate authorized by the Civil Code from the date of the notice of expense until paid in full.

4) The City may require the owner to post security in form and for a time period satisfactory to the city of guarantee of the performance of the obligations stated herein. Should the Owner fail to perform the obligations under the Agreement, the City may, in the case of a cash bond, act for the Owner using the proceeds from it, or in the case of a surety bond, require the sureties to perform the obligations of the Agreement. As an additional remedy, the Director may withdraw any previous stormwater related approval with respect to the property

on which a Device has been installed until such time as Owner repays to City its reasonable costs incurred in accordance with paragraph 3 above.

5) This agreement shall be recorded in the Office of the Recorder of Ventura County, California, at the expense of the Owner and shall constitute notice to all successors and assigns of the title to said Property of the obligation herein set forth, and also a lien in such amount as will fully reimburse the City, including interest as herein above set forth, subject to foreclosure in event of default in payment.

6) In event of legal action occasioned by any default or action of the Owner, or its successors or assigns, then the Owner and its successors or assigns agree(s) to pay all costs incurred by the City in enforcing the terms of this Agreement, including reasonable attorney's fees and costs, and that the same shall become a part of the lien against said Property.

7) It is the intent of the parties hereto that burdens and benefits herein undertaken shall constitute covenants that run with said Property and constitute a lien there against.

8) The obligations herein undertaken shall be binding upon the heirs, successors, executors, administrators and assigns of the parties hereto. The term "Owner" shall include not only the present Owner, but also its heirs, successors, executors, administrators, and assigns. Owner shall notify any successor to title of all or part of the Property about the existence of this Agreement. Owner shall provide such notice prior to such successor obtaining an interest in all or part of the Property. Owner shall provide a copy of such notice to the City at the same time such notice is provided to the successor.

9) Time is of the essence in the performance of this Agreement.

10) Any notice to a party required or called for in this Agreement shall be served in person, or by deposit in the U.S. Mail, first class postage prepaid, to the address set forth below. Notice(s) shall be deemed effective upon receipt, or seventy-two (72) hours after deposit in the U.S. Mail, whichever is earlier. A party may change a notice address only by providing written notice thereof to the other party.

IF TO CITY:	IF TO OWNER:
_____	Steven Juhnke
_____	8730 Wilshire Boulevard Suite 300
_____	Beverly Hills, CA 90211

IN WITNESS THEREOF, the parties hereto have affixed their signatures as of the date first written above.

APPROVED AS TO FORM:

City Attorney

OWNER:

Owner

Name: Steven Juhnke

Title: Vice President

CITY OF Moorpark :

Name:

Title:

OWNER:

Name: Steven Juhnke

Title: Vice President

ATTEST:

City Clerk Date

Notaries on Following Page

EXHIBIT A

(Legal Description)

EXHIBIT B

(Map/illustration)

APPENDIX E

Educational Materials

Non-Stormwater Discharges SC-10

Description

Non-stormwater discharges (NSWDs) are flows that do not consist entirely of stormwater. Some non-stormwater discharges do not include pollutants and may be discharged to the storm drain if local regulations allow. These include uncontaminated groundwater and natural springs. There are also some non-stormwater discharges that typically do not contain pollutants and may be discharged to the storm drain with conditions. These include: potable water sources, fire hydrant flushing, air conditioner condensate, landscape irrigation drainage and landscape watering, emergency firefighting, etc. as discussed in Section 2.

However there are certain non-stormwater discharges that pose an environmental concern. These discharges may originate from illegal dumping of industrial material or wastes and illegal connections such as internal floor drains, appliances, industrial processes, sinks, and toilets that are illegally connected to the nearby storm drainage system through on-site drainage and piping. These unauthorized discharges (examples of which may include: process waste waters, cooling waters, wash waters, and sanitary wastewater) can carry substances such as paint, oil, fuel and other automotive fluids, chemicals and other pollutants into storm drains.

Non-stormwater discharges will need to be addressed through a combination of detection and elimination. The ultimate goal is to effectively eliminate unauthorized non-stormwater discharges to the stormwater drainage system through implementation of measures to detect, correct, and enforce against illicit connections and illegal discharges of

Objectives
■ *Cover*
■ *Contain*
■ *Educate*
■ *Reduce/Minimize*
■ *Product Substitution*

Targeted Constituents	
Sediment	
Nutrients	✓
Trash	
Metals	✓
Bacteria	✓
Oil and Grease	✓
Organics	✓

Minimum BMPs Covered	
Good Housekeeping	✓
Preventative Maintenance	
Spill and Leak Prevention and Response	✓
Material Handling & Waste Management	
Erosion and Sediment Controls	
Employee Training Program	✓
Quality Assurance Record Keeping	✓

CASQA
CALIFORNIA STORMWATER QUALITY ASSOCIATION®

pollutants on streets and into the storm drain system and downstream water bodies.

Approach

Initially the Discharger must make an assessment of non-stormwater discharges to determine which types must be eliminated or addressed through BMPs. The focus of the following approach is the elimination of unauthorized non-stormwater discharges. See other BMP Fact Sheets for activity-specific pollution prevention procedures.

General Pollution Prevention Protocols

- Implement waste management controls described in SC-34 Waste Handling and Disposal.

- Develop clear protocols and lines of communication for effectively prohibiting non-stormwater discharges, especially those that are not classified as hazardous. These are often not responded to as effectively as they need to be.

- Stencil or demarcate storm drains, where applicable, to prevent illegal disposal of pollutants. Storm drain inlets should have messages such as "Dump No Waste Drains to Stream" or similar stenciled or demarcated next to them to warn against ignorant or unintentional dumping of pollutants into the storm drainage system.

- Manage and control sources of water such as hose bibs, faucets, wash racks, irrigation heads, etc. Identify hoses and faucets in the SWPPP, and post signage for appropriate use.

Non-Stormwater Discharge Investigation Protocols

Identifying the sources of non-stormwater discharges requires the Discharger to conduct an investigation of the facility at regular intervals. There are several categories of non-stormwater discharges:

- Visible, easily identifiable discharges, typically generated as surface runoff, such as uncontained surface runoff from vehicle or equipment washing; and

- Non-visible, (e.g., subsurface) discharges into the site drainage system through a variety of pathways that are not obvious.

The approach to detecting and eliminating non-stormwater discharges will vary considerably, as discussed below:

Visible and identifiable discharges

- Conduct routine inspections of the facilities and of each major activity area and identify visible evidence of unauthorized non-stormwater discharges. This may include:

  - ✓ Visual observations of actual discharges occurring;

- ✓ Evidence of surface staining, discoloring etc. that indicates that discharges have occurred;
- ✓ Pools of water in low lying areas when a rain event has not occurred; and
- ✓ Discussions with operations personnel to understand practices that may lead to unauthorized discharges.

- □ If evidence of non-stormwater discharges is discovered:
  - ✓ Document the location and circumstances using Worksheets 5 and 6 (Section 2 of the manual), including digital photos;
  - ✓ Identify and implement any quick remedy or corrective action (e.g., moving uncovered containers inside or to a proper location); and
  - ✓ Develop a plan to eliminate the discharge. Consult the appropriate activity-specific BMP Fact Sheet for alternative approaches to manage and eliminate the discharge.
- □ Consult the appropriate activity-specific BMP Fact Sheet for alternative approaches to manage and eliminate the discharge. Make sure the facility SWPPP is up-to-date and includes applicable BMPs to address the non-stormwater discharge.

Other Illegal Discharges (Non visible)

Illicit Connections

- □ Locate discharges from the industrial storm drainage system to the municipal storm drain system through review of "as-built" piping schematics.
- □ Isolate problem areas and plug illicit discharge points.
- □ Locate and evaluate discharges to the storm drain system.
- □ Visual Inspection and Inventory:
  - ✓ Inventory and inspect each discharge point during dry weather.
  - ✓ Keep in mind that drainage from a storm event can continue for a day or two following the end of a storm and groundwater may infiltrate the underground stormwater collection system.
  - ✓ Non-stormwater discharges are often intermittent and may require periodic inspections.

Review Infield Piping

- □ A review of the "as-built" piping schematic is a way to determine if there are any connections to the stormwater collection system.

- Inspect the path of loading/unloading area drain inlets and floor drains in older buildings.

- Never assume storm drains are connected to the sanitary sewer system.

Monitoring for investigation/detection of illegal discharges

- If a suspected illegal or unknown discharge is detected, monitoring of the discharge may help identify the content and/or suggest the source. This may be done with a field screening analysis, flow meter measurements, or by collecting a sample for laboratory analysis. Section 5 and Appendix D describe the necessary field equipment and procedures for field investigations.

- Investigative monitoring may be conducted over time. For example if, a discharge is intermittent, then monitoring might be conducted to determine the timing of the discharge to determine the source.

- Investigative monitoring may be conducted over a spatial area. For example, if a discharge is observed in a pipe, then monitoring might be conducted at accessible upstream locations in order to pinpoint the source of the discharge.

- Generally, investigative monitoring requiring collection of samples and submittal for lab analysis requires proper planning and specially trained staff.

Smoke Testing

Smoke testing of wastewater and stormwater collection systems is used to detect connections between the two piping systems. Smoke testing is generally performed at a downstream location and the smoke is forced upstream using blowers to create positive pressure. The advantage to smoke testing is that it can potentially identify multiple potential discharge sources at once.

- Smoke testing uses a harmless, non-toxic smoke cartridges developed specifically for this purpose.

- Smoke testing requires specialized equipment (e.g., cartridges, blowers) and is generally only appropriate for specially trained staff.

- A Standard Operating Procedure (SOP) for smoke testing is highly desirable. The SOP should address the following elements:

  - ✓ Proper planning and notification of nearby residents and emergency services is necessary since introducing smoke into the system may result in false alarms;

  - ✓ During dry weather, the stormwater collection system is filled with smoke and then traced back to sources;

- ✓ Temporary isolation of segments of pipe using sand bags is often needed to force the smoke into leaking pipes; and
- ✓ The appearance of smoke in a waste vent pipe, at a sewer manhole, or even the base of a toilet indicates that there may be a connection between the sanitary and storm water systems.

- Most municipal wastewater agencies will have necessary staff and equipment to conduct smoke testing and they should be contacted if cross connections with the sanitary sewer are suspected. See SC-44 Drainage System Maintenance for more information.

Dye Testing

- Dye testing is typically performed when there is a suspected specific pollutant source and location (i.e., leaking sanitary sewer) and there is evidence of dry weather flows in the stormwater collection system.
- Dye is released at a probable upstream source location, either the facility's sanitary or process wastewater system. The dye must be released with a sufficient volume of water to flush the system.
- Operators then visually examine the downstream discharge points from the stormwater collection system for the presence of the dye.
- Dye testing can be performed informally using commercially available products in order to conduct an initial investigation for fairly obvious cross-connections.
- More detailed dye testing should be performed by properly trained staff and follow SOPs. Specialized equipment such as fluorometers may be necessary to detect low concentrations of dye.
- Most municipal wastewater agencies will have necessary staff and equipment to conduct dye testing and they should be contacted if cross connections with the sanitary sewer are suspected.

TV Inspection of Drainage System

- Closed Circuit Television (CCTV) can be employed to visually identify illicit connections to the industrial storm drainage system. Two types of CCTV systems are available: (1) a small specially designed camera that can be manually pushed on a stiff cable through storm drains to observe the interior of the piping, or (2) a larger remote operated video camera on treads or wheels that can be guided through storm drains to view the interior of the pipe.
- CCTV systems often include a high-pressure water jet and camera on a flexible cable. The water jet cleans debris and biofilm off the inside of pipes so the camera can take video images of the pipe condition.

- CCTV units can detect large cracks and other defects such as offsets in pipe ends caused by root intrusions or shifting substrate.
- CCTV can also be used to detect dye introduced into the sanitary sewer.
- CCTV inspections require specialized equipment and properly trained staff and are generally best left to specialized contractors or municipal public works staff.

Illegal Dumping

- Substances illegally dumped on streets and into the storm drain systems and creeks may include paints, used oil and other automotive fluids, construction debris, chemicals, fresh concrete, leaves, grass clippings, and pet wastes. These wastes can cause stormwater and receiving water quality problems as well as clog the storm drain system itself.
- Establish a system for tracking incidents. The system should be designed to identify the following:
  - ✓ Illegal dumping hot spots;
  - ✓ Types and quantities (in some cases) of wastes;
  - ✓ Patterns in time of occurrence (time of day/night, month, or year);
  - ✓ Mode of dumping (abandoned containers, "midnight dumping" from moving vehicles, direct dumping of materials, accidents/spills);
  - ✓ An anonymous tip/reporting mechanism; and
  - ✓ Evidence of responsible parties (e.g., tagging, encampments, etc.).
- One of the keys to success of reducing or eliminating illegal dumping is increasing the number of people at the facility who are aware of the problem and who have the tools to at least identify the incident, if not correct it. Therefore, train field staff to recognize and report the incidents.

Once a site has been cleaned:

- Post "No Dumping" signs with a phone number for reporting dumping and disposal.
- Landscaping and beautification efforts of hot spots may also discourage future dumping, as well as provide open space and increase property values.
- Lighting or barriers may also be needed to discourage future dumping.
- See fact sheet SC-11 Spill Prevention, Control, and Cleanup.

Inspection

- Regularly inspect and clean up hot spots and other storm drainage areas where illegal dumping and disposal occurs.
- Conduct field investigations of the industrial storm drain system for potential sources of non-stormwater discharges.
- Pro-actively conduct investigations of high priority areas. Based on historical data, prioritize specific geographic areas and/or incident type for pro-active investigations.



Spill and Leak Prevention and Response

- On paved surfaces, clean up spills with as little water as possible. Use a rag for small spills, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be sent to a certified laundry (rags) or disposed of as hazardous waste.
- Never hose down or bury dry material spills. Sweep up the material and dispose of properly.
- Use adsorbent materials on small spills rather than hosing down the spill. Remove the adsorbent materials promptly and dispose of properly.
- For larger spills, a private spill cleanup company or Hazmat team may be necessary.
- See SC-11 Spill Prevention Control and Cleanup.



Employee Training Program

- Training of technical staff in identifying and documenting illegal dumping incidents is required. The frequency of training must be presented in the SWPPP, and depends on site-specific industrial materials and activities.
- Consider posting a quick reference table near storm drains to reinforce training.
- Train employees to identify non-stormwater discharges and report discharges to the appropriate departments.
- Educate employees about spill prevention and cleanup.
- Well-trained employees can reduce human errors that lead to accidental releases or spills. The employee should have the tools and knowledge to immediately begin cleaning up a spill should one occur. Employees should be familiar with the Spill Prevention Control and Countermeasure Plan. Employees should be able to identify work/jobs with high potential for spills and suggest methods to reduce possibility.
- Determine and implement appropriate outreach efforts to reduce non-permissible non-stormwater discharges.

- Conduct spill response drills annually (if no events occurred) in order to evaluate the effectiveness of the plan.
- When a responsible party is identified, educate the party on the impacts of his or her actions.



Quality Assurance and Record Keeping

Performance Evaluation

- Annually review internal investigation results; assess whether goals were met and what changes or improvements are necessary.
- Obtain feedback from personnel assigned to respond to, or inspect for, illicit connections and illegal dumping incidents.
- Develop document and data management procedures.
- A database is useful for defining and tracking the magnitude and location of the problem.
- Report prohibited non-stormwater discharges observed during the course of normal daily activities so they can be investigated, contained, and cleaned up or eliminated.
- Document that non-stormwater discharges have been eliminated by recording tests performed, methods used, dates of testing, and any on-site drainage points observed.
- Annually document and report the results of the program.
- Maintain documentation of illicit connection and illegal dumping incidents, including significant conditionally exempt discharges that are not properly managed.
- Document training activities.

Potential Limitations and Work-Arounds

Some facilities may have space constraints, limited staffing and time limitations that may preclude implementation of BMPs. Provided below are typical limitations and recommended "work-arounds."

- Many facilities do not have accurate, up-to-date 'as-built' plans or drawings which may be necessary in order to conduct non-stormwater discharge assessments.
  - ✓ Online tools such as Google Earth™ can provide an aerial view of the facility and may be useful in understanding drainage patterns and potential sources of non-stormwater discharges
  - ✓ Local municipal jurisdictions may have useful drainage systems maps.

- Video surveillance cameras are commonly used to secure the perimeter of industrial facilities against break-ins and theft. These surveillance systems may also be useful for capturing illegal dumping activities. Minor, temporary adjustments to the field of view of existing surveillance camera systems to target known or suspected problem areas may be a cost-effective way of capturing illegal dumping activities and identifying the perpetrators.

Potential Capital Facility Costs and Operation & Maintenance Requirements

Facilities

- Capital facility cost requirements may be minimal unless cross-connections to storm drains are detected.
- Indoor floor drains may require re-plumbing if cross-connections are detected.
- Leaky sanitary sewers will require repair or replacement which can have significant costs depending on the size and industrial activity at the facility.

Maintenance (including administrative and staffing)

- The primary effort is for staff time and depends on how aggressively a program is implemented.
- Costs for containment, and disposal of any leak or discharge is borne by the Discharger.
- Illicit connections can be difficult to locate especially if there is groundwater infiltration.
- Illegal dumping and illicit connection violations requires technical staff to detect and investigate them.

Supplemental Information

Permit Requirements

The IGP authorizes certain Non-Storm Water Discharges (NSWDs) provided BMPs are included in the SWPPP and implemented to:

- Reduce or prevent the contact of authorized NSWDs with materials or equipment that are potential sources of pollutants;
- Reduce, to the extent practicable, the flow or volume of authorized NSWDs;
- Ensure that authorized NSWDs do not contain quantities of pollutants that cause or contribute to an exceedance of a water quality standards (WQS); and,

- Reduce or prevent discharges of pollutants in authorized NSWDs in a manner that reflects best industry practice considering technological availability and economic practicability and achievability."

References and Resources

Center for Watershed Protection, 2004. *Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments*, EPA Cooperative Agreement X-82907801-0.

Dublin San Ramon Sanitation District. http://www.dsrsd.com/wwrw/smoketest.html.

Orange County Stormwater Program, Best Management Practices for Industrial/Commercial Business Activities. Available online at: http://ocwatersheds.com/documents/bmp/industrialcommercialbusinessesactivities.

Sacramento Stormwater Management Program, *Best Management Practices for Industrial Storm Water Pollution Control*, Available online at: http://www.msa.saccounty.net/sactostormwater/documents/guides/industrial-BMP-manual.pdf.

Santa Clara Valley Urban Runoff Pollution Prevention Program. http://www.scvurppp.org.

Southern California Coastal Water Research Project, 2013. *The California Microbial Source Identification Manual: A Tiered Approach to Identifying Fecal Pollution Sources to Beaches,* Technical Report 804.

The Storm Water Managers Resource Center, http://www.stormwatercenter.net/.

US EPA. National Pollutant Discharge Elimination System. Available online at: http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=factsheet_results&view=specific&bmp=111.

WEF Press Alexandria, Virginia, 2009.Existing Sewer Evaluation and Rehabilitation: *WEF Manual of Practice No. FD-6 ASCE/EWRI Manuals and Reports on Engineering Practice No. 62, Third Edition.*

Spill Prevention, Control & Cleanup SC-11

Description

Many activities that occur at an industrial or commercial site have the potential to cause accidental spills. Preparation for accidental spills, with proper training and reporting systems implemented, can minimize the discharge of pollutants to the environment.

Spills and leaks are one of the largest contributors of stormwater pollutants. Spill prevention and control plans are applicable to any site at which hazardous materials are stored or used. An effective plan should have spill prevention and response procedures that identify hazardous material storage areas, specify material handling procedures, describe spill response procedures, and provide locations of spill clean-up equipment and materials. The plan should take steps to identify and characterize potential spills, eliminate and reduce spill potential, respond to spills when they occur in an effort to prevent pollutants from entering the stormwater drainage system, and train personnel to prevent and control future spills. An adequate supply of spill clean-up materials must be maintained onsite.

Objectives
■ *Cover*
■ *Contain*
■ *Educate*
■ *Reduce/Minimize*
■ *Product Substitution*

Targeted Constituents	
Sediment	
Nutrients	
Trash	
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Minimum BMPs Covered	
Good Housekeeping	
Preventative Maintenance	
Spill and Leak Prevention and Response	✓
Material Handling & Waste Management	
Erosion and Sediment Controls	
Employee Training Program	✓
Quality Assurance Record Keeping	✓

Approach

General Pollution Prevention Protocols

- ☐ Develop procedures to prevent/mitigate spills to storm drain systems.
- ☐ Develop and standardize reporting procedures, containment, storage, and disposal activities, documentation, and follow-up procedures.
- ☐ Establish procedures and/or controls to minimize spills and leaks. The procedures should address:
  - ✓ Description of the facility, owner and address, activities, chemicals, and quantities present;

CASQA
CALIFORNIA STORMWATER QUALITY ASSOCIATION®

- ✓ Facility map of the locations of industrial materials;
- ✓ Notification and evacuation procedures;
- ✓ Cleanup instructions;
- ✓ Identification of responsible departments; and
- ✓ Identify key spill response personnel.

- ☐ Recycle, reclaim, or reuse materials whenever possible. This will reduce the amount of process materials that are brought into the facility.



Spill and Leak Prevention and Response

Spill Prevention

- ☐ Develop procedures to prevent/mitigate spills to storm drain systems. Develop and standardize reporting procedures, containment, storage, and disposal activities, documentation, and follow-up procedures.

- ☐ If illegal dumping is observed at the facility:

  - ✓ Post "No Dumping" signs with a phone number for reporting illegal dumping and disposal. Signs should also indicate fines and penalties applicable for illegal dumping.
  - ✓ Landscaping and beautification efforts may also discourage illegal dumping.
  - ✓ Bright lighting and/or entrance barriers may also be needed to discourage illegal dumping.

- ☐ Store and contain liquid materials in such a manner that if the container is ruptured, the contents will not discharge, flow, or be washed into the storm drainage system, surface waters, or groundwater.

- ☐ If the liquid is oil, gas, or other material that separates from and floats on water, install a spill control device (such as a tee section) in the catch basins that collects runoff from the storage tank area.



Preventative Maintenance

- ☐ Place drip pans or absorbent materials beneath all mounted taps, and at all potential drip and spill locations during filling and unloading of tanks. Any collected liquids or soiled absorbent materials must be reused/recycled or properly disposed.

- ☐ Store and maintain appropriate spill cleanup materials in a location known to all near the tank storage area; and ensure that employees are familiar with the site's spill control plan and/or proper spill cleanup procedures.

- ☐ Sweep and clean the storage area monthly if it is paved, *do not hose down the area to a storm drain.*

- ☐ Check tanks (and any containment sumps) daily for leaks and spills. Replace tanks that are leaking, corroded, or otherwise deteriorating with tanks in good condition. Collect all spilled liquids and properly dispose of them.

- ☐ Label all containers according to their contents (e.g., solvent, gasoline).

- ☐ Label hazardous substances regarding the potential hazard (corrosive, radioactive, flammable, explosive, poisonous).

- ☐ Prominently display required labels on transported hazardous and toxic materials (per US DOT regulations).

- ☐ Identify key spill response personnel.

Spill Response

- ☐ Clean up leaks and spills immediately.

- ☐ Place a stockpile of spill cleanup materials where it will be readily accessible (e.g., near storage and maintenance areas).

- ☐ On paved surfaces, clean up spills with as little water as possible.

  - ✓ Use a rag for small spills, a damp mop for general cleanup, and absorbent material for larger spills.

  - ✓ If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be sent to a certified laundry (rags) or disposed of as hazardous waste.

  - ✓ If possible use physical methods for the cleanup of dry chemicals (e.g., brooms, shovels, sweepers, or vacuums).

- ☐ Never hose down or bury dry material spills. Sweep up the material and dispose of properly.

- ☐ Chemical cleanups of material can be achieved with the use of adsorbents, gels, and foams. Use adsorbent materials on small spills rather than hosing down the spill. Remove the adsorbent materials promptly and dispose of properly.

- ☐ For larger spills, a private spill cleanup company or Hazmat team may be necessary.

Reporting

- Report spills that pose an immediate threat to human health or the environment to the Regional Water Quality Control Board or local authority as location regulations dictate.
- Federal regulations require that any oil spill into a water body or onto an adjoining shoreline be reported to the National Response Center (NRC) at 800-424-8802 (24 hour).
- Report spills to 911 for dispatch and clean-up assistance when needed. Do not contact fire agencies directly.
- Establish a system for tracking incidents. The system should be designed to identify the following:
  - ✓ Types and quantities (in some cases) of wastes;
  - ✓ Patterns in time of occurrence (time of day/night, month, or year);
  - ✓ Mode of dumping (abandoned containers, "midnight dumping" from moving vehicles, direct dumping of materials, accidents/spills);
  - ✓ Clean-up procedures; and
  - ✓ Responsible parties.



Employee Training Program

- Educate employees about spill prevention and cleanup.
- Well-trained employees can reduce human errors that lead to accidental releases or spills:
  - ✓ The employee should have the tools and knowledge to immediately begin cleaning up a spill should one occur; and
  - ✓ Employees should be familiar with the Spill Prevention Control and Countermeasure Plan.
- Employees should be educated about aboveground storage tank requirements. Employees responsible for aboveground storage tanks and liquid transfers should be thoroughly familiar with the Spill Prevention Control and Countermeasure Plan and the plan should be readily available.
- Train employees to recognize and report illegal dumping incidents.

Other Considerations (Limitations and Regulations)

- State regulations exist for facilities with a storage capacity of 10,000 gallons or more of petroleum to prepare a Spill Prevention Control and Countermeasure (SPCC) Plan (Health & Safety Code Chapter 6.67).
- State regulations also exist for storage of hazardous materials (Health & Safety Code Chapter 6.95), including the preparation of area and business plans for emergency response to the releases or threatened releases.
- Consider requiring smaller secondary containment areas (less than 200 sq. ft.) to be connected to the sanitary sewer, prohibiting any hard connections to the storm drain.

Requirements

Costs (including capital and operation & maintenance)

- Will vary depending on the size of the facility and the necessary controls.
- Prevention of leaks and spills is inexpensive. Treatment and/or disposal of contaminated soil or water can be quite expensive.

Maintenance (including administrative and staffing)

- Develop spill prevention and control plan, provide and document training, conduct inspections of material storage areas, and supply spill kits.
- Extra time is needed to properly handle and dispose of spills, which results in increased labor costs.

Supplemental Information

Further Detail of the BMP

Reporting

Record keeping and internal reporting represent good operating practices because they can increase the efficiency of the facility and the effectiveness of BMPs. A good record keeping system helps the facility minimize incident recurrence, correctly respond with appropriate cleanup activities, and comply with legal requirements. A record keeping and reporting system should be set up for documenting spills, leaks, and other discharges, including discharges of hazardous substances in reportable quantities. Incident records describe the quality and quantity of non-stormwater discharges to the storm sewer. These records should contain the following information:

- Date and time of the incident;
- Weather conditions;
- Duration of the spill/leak/discharge;

- Cause of the spill/leak/discharge;
- Response procedures implemented;
- Persons notified; and
- Environmental problems associated with the spill/leak/discharge.

Separate record keeping systems should be established to document housekeeping and preventive maintenance inspections, and training activities. All housekeeping and preventive maintenance inspections should be documented. Inspection documentation should contain the following information:

- Date and time the inspection was performed;
- Name of the inspector;
- Items inspected;
- Problems noted;
- Corrective action required; and
- Date corrective action was taken.

Other means to document and record inspection results are field notes, timed and dated photographs, videotapes, and drawings and maps.

Aboveground Tank Leak and Spill Control

Accidental releases of materials from aboveground liquid storage tanks present the potential for contaminating stormwater with many different pollutants. Materials spilled, leaked, or lost from tanks may accumulate in soils or on impervious surfaces and be carried away by stormwater runoff.

The most common causes of unintentional releases are:

- Installation problems;
- Failure of piping systems (pipes, pumps, flanges, couplings, hoses, and valves);
- External corrosion and structural failure;
- Spills and overfills due to operator error; and
- Leaks during pumping of liquids or gases from truck or rail car to a storage tank or vice versa.

Storage of reactive, ignitable, or flammable liquids should comply with the Uniform Fire Code and the National Electric Code. Practices listed below should be employed to enhance the code requirements:

- Tanks should be placed in a designated area.
- Tanks located in areas where firearms are discharged should be encapsulated in concrete or the equivalent.
- Designated areas should be impervious and paved with Portland cement concrete, free of cracks and gaps, in order to contain leaks and spills.
- Liquid materials should be stored in UL approved double walled tanks or surrounded by a curb or dike to provide the volume to contain 10 percent of the volume of all of the containers or 110 percent of the volume of the largest container, whichever is greater. The area inside the curb should slope to a drain.
- For used oil or dangerous waste, a dead-end sump should be installed in the drain.
- All other liquids should be drained to the sanitary sewer if available. The drain must have a positive control such as a lock, valve, or plug to prevent release of contaminated liquids.
- Accumulated stormwater in petroleum storage areas should be passed through an oil/water separator.

Maintenance is critical to preventing leaks and spills. Conduct routine inspections and:

- Check for external corrosion and structural failure.
- Check for spills and overfills due to operator error.
- Check for failure of piping system (pipes, pumps, flanges, coupling, hoses, and valves).
- Check for leaks or spills during pumping of liquids or gases from truck or rail car to a storage facility or vice versa.
- Visually inspect new tank or container installation for loose fittings, poor welding, and improper or poorly fitted gaskets.
- Inspect tank foundations, connections, coatings, and tank walls and piping system. Look for corrosion, leaks, cracks, scratches, and other physical damage that may weaken the tank or container system.
- Frequently relocate accumulated stormwater during the wet season.

- Periodically conduct integrity testing by a qualified professional.

Vehicle Leak and Spill Control

Major spills on roadways and other public areas are generally handled by highly trained Hazmat teams from local fire departments or environmental health departments. The measures listed below pertain to leaks and smaller spills at vehicle maintenance shops.

In addition to implementing the spill prevention, control, and clean up practices above, use the following measures related to specific activities:

Vehicle and Equipment Maintenance

- Perform all vehicle fluid removal or changing inside or under cover to prevent the run-on of stormwater and the runoff of spills.
- Regularly inspect vehicles and equipment for leaks, and repair immediately.
- Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment onsite.
- Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.
- Immediately drain all fluids from wrecked vehicles.
- Store wrecked vehicles or damaged equipment under cover.
- Place drip pans or absorbent materials under heavy equipment when not in use.
- Use absorbent materials on small spills rather than hosing down the spill.
- Remove the adsorbent materials promptly and dispose of properly.
- Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around.
- Oil filters disposed of in trashcans or dumpsters can leak oil and contaminate stormwater. Place the oil filter in a funnel over a waste oil recycling drum to drain excess oil before disposal. Oil filters can also be recycled. Ask your oil supplier or recycler about recycling oil filters.
- Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries, even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

Vehicle and Equipment Fueling

- Design the fueling area to prevent the run-on of stormwater and the runoff of spills:

  Cover fueling area if possible.

  Use a perimeter drain or slope pavement inward with drainage to a sump.

  Pave fueling area with concrete rather than asphalt.

- If dead-end sump is not used to collect spills, install an oil/water separator.
- Install vapor recovery nozzles to help control drips as well as air pollution.
- Discourage "topping-off" of fuel tanks.
- Use secondary containment when transferring fuel from the tank truck to the fuel tank.
- Use absorbent materials on small spills and general cleaning rather than hosing down the area. Remove the absorbent materials promptly.
- Carry out all Federal and State requirements regarding underground storage tanks, or install above ground tanks.
- Do not use mobile fueling of mobile industrial equipment around the facility; rather, transport the equipment to designated fueling areas.
- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Train employees in proper fueling and cleanup procedures.

Industrial Spill Prevention Response

For the purposes of developing a spill prevention and response program to meet the stormwater regulations, facility managers should use information provided in this fact sheet and the spill prevention/response portions of the fact sheets in this handbook, for specific activities.

The program should:

- Integrate with existing emergency response/hazardous materials programs (e.g., Fire Department).
- Develop procedures to prevent/mitigate spills to storm drain systems.
- Identify responsible departments.

- Develop and standardize reporting procedures, containment, storage, and disposal activities, documentation, and follow-up procedures.
- Address spills at municipal facilities, as well as public areas.
- Provide training concerning spill prevention, response and cleanup to all appropriate personnel.

References and Resources

California's Nonpoint Source Program Plan. http://www.swrcb.ca.gov/nps/index.html.

Clark County Storm Water Pollution Control Manual. Available online at: http://www.co.clark.wa.us/pubworks/bmpman.pdf.

King County Storm Water Pollution Control Manual. Available online at: http://dnr.metrokc.gov/wlr/dss/spcm.htm.

Orange County Stormwater Program, Best Management Practices for Industrial/Commercial Business Activities. Available online at: http://ocwatersheds.com/documents/bmp/industrialcommercialbusinessesactivities

Santa Clara Valley Urban Runoff Pollution Prevention Program. http://www.scvurppp.org.

The Stormwater Managers Resource Center. http://www.stormwatercenter.net/.

Outdoor Loading/Unloading SC-30

Description

The loading/unloading of materials usually takes place outside on docks or terminals; therefore, materials spilled, leaked, or lost during loading/unloading may collect in the soil or on other surfaces and have the potential to be carried away by wind, stormwater runoff or when the area is cleaned. Additionally, rainfall may wash pollutants from machinery used to unload or move materials. Implementation of the following protocols will prevent or reduce the discharge of pollutants to stormwater from outdoor loading/unloading of materials.

Approach

Reduce potential for pollutant discharge through source control pollution prevention and BMP implementation. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

General Pollution Prevention Protocols

- Park tank trucks or delivery vehicles in designated areas so that spills or leaks can be contained.
- Limit exposure of material to rainfall whenever possible.
- Prevent stormwater run-on.
- Check equipment regularly for leaks.



Good Housekeeping

- Develop an operations plan that describes procedures for loading and/or unloading.
- Conduct loading and unloading in dry weather if possible.

Objectives
■ *Cover*
■ *Contain*
■ *Educate*
■ *Reduce/Minimize*
■ *Product Substitution*

Targeted Constituents	
Sediment	✓
Nutrients	✓
Trash	
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Minimum BMPs Covered	
Good Housekeeping	✓
Preventative Maintenance	
Spill and Leak Prevention and Response	✓
Material Handling & Waste Management	✓
Erosion and Sediment Controls	
Employee Training Program	✓
Quality Assurance Record Keeping	✓

CASQA
CALIFORNIA STORMWATER QUALITY ASSOCIATION®

- Cover designated loading/unloading areas to reduce exposure of materials to rain.
- Consider placing a seal or door skirt between delivery vehicles and building to prevent exposure to rain.
- Design loading/unloading area to prevent stormwater run-on, which would include grading or berming the area, and position roof downspouts so they direct stormwater away from the loading/unloading areas.
- Have employees load and unload all materials and equipment in covered areas such as building overhangs at loading docks if feasible.
- Load/unload only at designated loading areas.
- Use drip pans underneath hose and pipe connections and other leak-prone spots during liquid transfer operations, and when making and breaking connections. Several drip pans should be stored in a covered location near the liquid transfer area so that they are always available, yet protected from precipitation when not in use. Drip pans can be made specifically for railroad tracks. Drip pans must be cleaned periodically, and drip collected materials must be disposed of properly.
- Pave loading areas with concrete instead of asphalt.
- Avoid placing storm drains inlets in the area.
- Grade and/or berm the loading/unloading area with drainage to sump; regularly remove materials accumulated in sump.



Spill Response and Prevention Procedures

- Keep your spill prevention and control plan up-to-date or have an emergency spill cleanup plan readily available, as applicable.
- Contain leaks during transfer.
- Store and maintain appropriate spill cleanup materials in a location that is readily accessible and known to all employees.
- Ensure that employees are familiar with the site's spill control plan and proper spill cleanup procedures.
- Use drip pans or comparable devices when transferring oils, solvents, and paints.



Material Handling and Waste Management

- Spot clean leaks and drips routinely to prevent runoff of spillage.
- Do not pour liquid wastes into floor drains, sinks, outdoor storm drain inlets, or other storm drains or sewer connections.

- Do not put used or leftover cleaning solutions, solvents, and automotive fluids in the storm drain or sanitary sewer.
- Collect leaking or dripping fluids in drip pans or containers. Fluids are easier to recycle if kept separate.
- Promptly transfer used fluids to the proper waste or recycling drums. Do not leave drip pans or other open containers lying around.
- Minimize the possibility of stormwater pollution from outside waste receptacles by doing at least one of the following:
  - ✓ Use only watertight waste receptacle(s) and keep the lid(s) closed.
  - ✓ Grade and pave the waste receptacle area to prevent run-on of stormwater.
  - ✓ Install a roof over the waste receptacle area.
  - ✓ Install a low containment berm around the waste receptacle area.
  - ✓ Use and maintain drip pans under waste receptacles.
- Post "no littering" signs.
- Perform work area clean-up and dry sweep after daily operations.



Employee Training Program

- Train employees (e.g., fork lift operators) and contractors on proper spill containment and cleanup.
- Have employees trained in spill containment and cleanup present during loading/unloading.
- Train employees in proper handling techniques during liquid transfers to avoid spills.
- Make sure forklift operators are properly trained on loading and unloading procedures.



Quality Assurance and Record Keeping

- Keep accurate maintenance logs that document activities performed, quantities of materials removed, and improvement actions.
- Keep accurate logs of spill response actions that document what was spilled, how it was cleaned up, and how the waste was disposed.
- Establish procedures to complete logs and file them in the central office.
- Keep accurate logs of daily clean-up operations.

Potential Limitations and Work-Arounds

Some facilities may have space constraints, limited staffing and time limitations that may preclude implementation of BMPs. Provided below are typical limitations and recommended "work-arounds."

- Space and time limitations may preclude all transfers from being performed indoors or under cover.
  - ✓ Designate specific areas for outdoor loading and unloading.
  - ✓ Require employees to understand and follow spill and leak prevention BMPs.
- It may not be possible to conduct transfers only during dry weather.
  - ✓ Limit materials and equipment rainfall exposure to all extents practicable.
  - ✓ Require employees to understand and follow spill and leak prevention BMPs.

Potential Capital Facility Costs and Operation & Maintenance Requirements

Facilities

Many facilities will already have indoor or covered areas where loading/unloading takes place and will require no additional capital expenditures.

If outdoor activities are required, construction of berms or other means to retain spills and leaks may require appropriate constructed systems for containment. These containment areas may require significant new capital investment.

Capital investments will likely be required at some sites if adequate cover and containment facilities do not exist and can vary significantly depending upon site conditions.

Maintenance

Most of the operations and maintenance activities associated with implementing this BMP are integrally linked to routine operations as previously described. Therefore additional O&M is not required.

- Conduct regular inspections and make repairs and improvements as necessary.
- Check loading and unloading equipment regularly for leaks.
- Conduct regular broom dry-sweeping of area. Do not wash with water.

Supplemental Information

Loading and Unloading of Liquids

- Loading or unloading of liquids should occur in the manufacturing building so that any spills that are not completely retained can be discharged to the sanitary sewer,

treatment plant, or treated in a manner consistent with local sewer authorities and permit requirements.

- For loading and unloading tank trucks to above and below ground storage tanks, the following procedures should be used:
  - ✓ The area where the transfer takes place should be paved. If the liquid is reactive with the asphalt, Portland cement should be used to pave the area.
  - ✓ The transfer area should be designed to prevent run-on of stormwater from adjacent areas. Sloping the pad and using a curb, like a speed bump, around the uphill side of the transfer area should reduce run-on.
  - ✓ The transfer area should be designed to prevent runoff of spilled liquids from the area. Sloping the area to a drain should prevent runoff. The drain should be connected to a dead-end sump or to the sanitary sewer. A positive control valve should be installed on the drain.
- For transfer from rail cars to storage tanks that must occur outside, use the following procedures:
  - ✓ Drip pans should be placed at locations where spillage may occur, such as hose connections, hose reels, and filler nozzles. Use drip pans when making and breaking connections.
  - ✓ Drip pan systems should be installed between the rails to collect spillage from tank cars.

References and Resources

Minnesota Pollution Control Agency, *Industrial Stormwater Best Management Practices Guidebook BMP 26 Fueling and Liquid Loading/Unloading Operations*. Available online at: http://www.pca.state.mn.us/index.php/view-document.html?gid=10557.

New Jersey Department of Environmental Protection, 2013. *Basic Industrial Stormwater General Permit Guidance Document NJPDES General Permit No NJ0088315*. Available online at: http://www.nj.gov/dep/dwq/pdf/5G2_guidance_color.pdf.

Orange County Stormwater Program, Best Management Practices for Industrial/Commercial Business Activities. Available online at: http://ocwatersheds.com/documents/bmp/industrialcommercialbusinessesactivities.

Oregon Department of Environmental Quality, 2013. *Industrial Stormwater Best Management Practices Manual- BMP 26 Fueling and Liquid Loading/Unloading Operations*. Available online at: http://www.deq.state.or.us/wq/wqpermit/docs/IndBMP021413.pdf.

Sacramento Stormwater Management Program, *Best Management Practices for Industrial Storm Water Pollution Control*. Available online at: http://www.msa.saccounty.net/sactostormwater/documents/guides/industrial-BMP-manual.pdf.

Sacramento County Environmental Management Stormwater Program: *Best Management Practices*. Available online at: http://www.emd.saccounty.net/EnvHealth/Stormwater/Stormwater-BMPs.html.

Santa Clara Valley Urban Runoff Pollution Prevention Program. http://www.scvurppp-w2k.com/.

US EPA. National Pollutant Discharge Elimination System – Industrial Fact Sheet Series for Activities Covered by EPA's Multi Sector General Permit. Available online at: http://cfpub.epa.gov/npdes/stormwater/swsectors.cfm.

Outdoor Equipment Operations SC-32

Description

Outside process equipment operations and maintenance can contaminate stormwater runoff. Activities, such as grinding, painting, coating, sanding, degreasing or parts cleaning, landfills and waste piles, and solid waste treatment and disposal are examples of process operations that can lead to contamination of stormwater runoff. The targeted constituents will vary for each site depending on the operation being performed.

Approach

Implement source control BMPs to limit exposure of outdoor equipment to direct precipitation and stormwater run-on. Refer to SC-22 Vehicle and Equipment Repair for additional information.

General Pollution Prevention Protocols

- ☐ Perform the activity during dry periods whenever possible.
- ☐ Install secondary containment measures where leaks and spills may occur.
- ☐ Use non-toxic chemicals for maintenance and minimize or eliminate the use of solvents.
- ☐ Connect process equipment area to public sanitary sewer or facility wastewater treatment system when possible. Some jurisdictions require that secondary containment areas be connected to the sanitary sewer, prohibiting any hard connections to the storm drain.



Good Housekeeping

- ☐ Manage materials and waste properly (see Material Handling and Waste Management) to reduce adverse impacts on stormwater quality.

Objectives
■ Cover
■ *Contain*
■ *Educate*
■ *Reduce/Minimize*

Targeted Constituents	
Sediment	✓
Nutrients	✓
Trash	✓
Metals	✓
Bacteria	✓
Oil and Grease	✓
Organics	✓

Minimum BMPs Covered	
Good Housekeeping	✓
Preventative Maintenance	✓
Spill and Leak Prevention and Response	✓
Material Handling & Waste Management	✓
Erosion and Sediment Controls	
Employee Training Program	✓
Quality Assurance Record Keeping	✓

CASQA
CALIFORNIA STORMWATER QUALITY ASSOCIATION®

- Cover the work area with a permanent roof if possible.
- Use drop cloths for sanding and painting operations.
- Use a vacuum for fine particle clean-up in pavement cracks and crevices.
- Minimize contact of stormwater with outside process equipment operations through berming and drainage routing (run-on prevention).
- "Spot clean" leaks and drips routinely. Leaks are not cleaned up until the absorbent is picked up and disposed of properly.
- Paint signs on storm drain inlets to indicate that they are not to receive liquid or solid wastes.
- Use roll down or permanent walls when windy/breezy to prevent wind transport of particulates/pollutants.



Preventative Maintenance

- Design outdoor equipment areas to prevent stormwater runoff and spills. Use a perimeter drain or slope pavement inward with drainage to sump.
- Dry clean the work area regularly. Do not wash outdoor equipment with water if there is a direct connection to the storm drain.
- Pave area with concrete rather than asphalt.
- Inspect outdoor equipment regularly for leaks or spills. Also check for structural failure, spills and overfills due to operator error, and/or failure of piping system.
- Inspect and clean, if necessary, storm drain inlets and catch basins within the outdoor equipment area before October 1 each year.



Spill Response and Prevention Procedures

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Have employees trained in emergency spill cleanup procedures present when dangerous waste, liquid chemicals, or other wastes are delivered.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- Prevent operator errors by using engineering safe guards and thus reducing accidental releases of pollutant.



Material Handling and Waste Management

- Do not pour liquid wastes into floor drains, sinks, outdoor storm drain inlets, or other storm drain or sewer connections.
- Collect leaking or dripping fluids in drip pans or containers. Fluids are easier to recycle if kept separate.
- Promptly transfer used fluids to the proper waste or recycling drums. Do not leave drip pans or other open containers lying around.
- Minimize the possibility of stormwater pollution from outside waste receptacles by doing at least one of the following:
  - ✓ Use only watertight waste receptacle(s) and keep the lid(s) closed.
  - ✓ Grade and pave the waste receptacle area to prevent run-on of stormwater.
  - ✓ Install a roof over the waste receptacle area.



Employee Training Program

- Educate employees about pollution prevention measures and goals.
- Train employees on proper equipment operation and maintenance procedures.
- Train all employees upon hiring and annually thereafter on proper methods for handling and disposing of waste. Ensure that all employees understand stormwater discharge prohibitions, wastewater discharge requirements, and these best management practices.
- Use a training log or similar method to document training.
- Ensure that employees are familiar with the site's spill control plan and/or proper spill cleanup procedures.



Quality Assurance and Record Keeping

- Keep accurate maintenance logs that document minimum BMP activities performed for outdoor equipment, types and quantities of materials removed and disposed of, and any improvement actions.
- Keep accurate logs of spill response actions that document what was spilled, how it was cleaned up, and how the waste was disposed.
- Establish procedures to complete logs and file them in the central office.

Potential Limitations and Work-Arounds

Some facilities may have space constraints, limited staffing and time limitations that may preclude implementation of BMPs. Provided below are typical limitations and recommended "work-arounds."

- Providing cover over outdoor equipment may be impractical or cost-prohibitive.
  - ✓ Operate outdoor equipment only during periods of dry weather.
- Regular operations and time limitations may require outdoor activities during wet weather.
  - ✓ Designate specific areas for outdoor activities.
  - ✓ Allow time for work area clean-up after each shift.
  - ✓ Require employees to understand and follow preventive maintenance and spill and leak prevention BMPs.
  - ✓ Design and install secondary containment and good housekeeping BMPs for outdoor equipment area.
- Storage sheds often must meet building and fire code requirements.

Potential Capital Facility Costs and Operation & Maintenance Requirements

Facilities

- Many facilities will already have indoor covered areas where vehicle and equipment repairs take place and will require no additional capital expenditures.
- If outdoor activities are required, construction of berms or other means to retain spills and leaks may require appropriate constructed systems for containment. These containment areas may require significant new capital investment.
- Capital investments will likely be required at some sites if adequate cover and containment facilities do not exist and can vary significantly depending upon site conditions.

Maintenance

- Most of the operations and maintenance activities associated with implementing this BMP are integrally linked to routine operations as previously described. Therefore additional O&M is not required.
- For facilities responsible for pre-treating their wastewater prior to discharging, the proper functioning of structural treatment system is an important maintenance consideration.
- Routine cleanout of oil and grease is required for the devices to maintain their effectiveness, usually at least once a month. During periods of heavy rainfall, cleanout is required more often to ensure pollutants are not washed through the trap. Sediment removal is also required on a regular basis to keep the device working efficiently.

References and Resources

Minnesota Pollution Control Agency. *Industrial Stormwater Best Management Practices Guidebook BMP 26 Fueling and Liquid Loading/Unloading Operations*. Available online at: http://www.pca.state.mn.us/index.php/view-document.html?gid=10557.

New Jersey Department of Environmental Protection, 2013. *Basic Industrial Stormwater General Permit Guidance Document NJPDES General Permit No NJ0088315*. Available online at: http://www.nj.gov/dep/dwq/pdf/5G2_guidance_color.pdf.

Orange County Stormwater Program, Best Management Practices for Industrial/Commercial Business Activities. Available online at: http://ocwatersheds.com/documents/bmp/industrialcommercialbusinessesactivities.

Oregon Department of Environmental Quality, *Industrial Stormwater Best Management Practices Manual- BMP 26 Fueling and Liquid Loading/Unloading Operations*, February 2013. Available online at: http://www.deq.state.or.us/wq/wqpermit/docs/IndBMP021413.pdf.

Sacramento Stormwater Management Program. *Best Management Practices for Industrial Storm Water Pollution Control*. Available online at: http://www.msa.saccounty.net/sactostormwater/documents/guides/industrial-BMP-manual.pdf.

Sacramento County Environmental Management Stormwater Program: Best Management Practices. Available online at: http://www.emd.saccounty.net/EnvHealth/Stormwater/Stormwater-BMPs.html.

Santa Clara Valley Urban Runoff Pollution Prevention Program. http://www.scvurppp-w2k.com/

US EPA. National Pollutant Discharge Elimination System – Industrial Fact Sheet Series for Activities Covered by EPA's Multi Sector General Permit. Available online at: http://cfpub.epa.gov/npdes/stormwater/swsectors.cfm.

Waste Handling & Disposal SC-34

Description

Improper storage and handling of solid wastes can allow toxic compounds, oils and greases, heavy metals, nutrients, suspended solids, and other pollutants to enter stormwater runoff. The discharge of pollutants to stormwater from waste handling and disposal can be prevented and reduced by tracking waste generation, storage, and disposal; reducing waste generation and disposal through source reduction, reuse, and recycling; and preventing run-on and runoff.

Approach

Reduce potential for pollutant discharge through source control pollution prevention and BMP implementation. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

General Pollution Prevention Protocols

- ☐ Accomplish reduction in the amount of waste generated using the following source controls:
  - ✓ Production planning and sequencing;
  - ✓ Process or equipment modification;
  - ✓ Raw material substitution or elimination;
  - ✓ Loss prevention and housekeeping;
  - ✓ Waste segregation and separation; and
  - ✓ Close loop recycling.
- ☐ Establish a material tracking system to increase awareness about material usage. This may reduce spills and minimize contamination, thus reducing the amount of waste produced.
- ☐ Recycle materials whenever possible.

Objectives
■ *Cover*
■ *Contain*
■ *Educate*
■ *Reduce/Minimize*
■ *Product Substitution*

Targeted Constituents	
Sediment	
Nutrients	
Trash	
Metals	✓
Bacteria	✓
Oil and Grease	✓
Organics	✓

Minimum BMPs Covered	
Good Housekeeping	✓
Preventative Maintenance	✓
Spill and Leak Prevention and Response	✓
Material Handling & Waste Management	✓
Erosion and Sediment Controls	
Employee Training Program	✓
Quality Assurance Record Keeping	✓

CASQA
CALIFORNIA STORMWATER QUALITY ASSOCIATION®

- Use the entire product before disposing of the container.
- To the extent possible, store wastes under cover or indoors after ensuring all safety concerns such as fire hazard and ventilation are addressed.
- Provide containers for each waste stream at each work station. Allow time after shift to clean area.



Good Housekeeping

- Cover storage containers with leak proof lids or some other means. If waste is not in containers, cover all waste piles (plastic tarps are acceptable coverage) and prevent stormwater run-on and runoff with a berm. The waste containers or piles must be covered except when in use.
- Use drip pans or absorbent materials whenever grease containers are emptied by vacuum trucks or other means. Grease cannot be left on the ground. Collected grease must be properly disposed of as garbage.
- Dispose of rinse and wash water from cleaning waste containers into a sanitary sewer if allowed by the local sewer authority. Do not discharge wash water to the street or storm drain. Clean in a designated wash area that drains to a clarifier.
- Transfer waste from damaged containers into safe containers.
- Take special care when loading or unloading wastes to minimize losses. Loading systems can be used to minimize spills and fugitive emission losses such as dust or mist. Vacuum transfer systems can minimize waste loss.
- Keep the waste management area clean at all times by sweeping and cleaning up spills immediately.
- Use dry methods when possible (e.g., sweeping, use of absorbents) when cleaning around restaurant/food handling dumpster areas. If water must be used after sweeping/using absorbents, collect water and discharge through grease interceptor to the sewer.
- Stencil or demarcate storm drains on the facility's property with prohibitive message regarding waste disposal.
- Cover waste piles with temporary covering material such as reinforced tarpaulin, polyethylene, polyurethane, polypropylene or hypalon.
- If possible, move the activity indoor after ensuring all safety concerns such as fire hazard and ventilation are addressed.



Preventative Maintenance

- Prevent stormwater run-on from entering the waste management area by enclosing the area or building a berm around the area.
- Prevent waste materials from directly contacting rain.

- Cover waste piles with temporary covering material such as reinforced tarpaulin, polyethylene, polyurethane, polypropylene or hypalon.
- Cover the area with a permanent roof if feasible.
- Cover dumpsters to prevent rain from washing waste out of holes or cracks in the bottom of the dumpster.
- Check waste containers weekly for leaks and to ensure that lids are on tightly. Replace any that are leaking, corroded, or otherwise deteriorating.
- Sweep and clean the waste management area regularly. Use dry methods when possible (e.g., sweeping, vacuuming, use of absorbents) when cleaning around restaurant/food handling dumpster areas. If water must be used after sweeping/using absorbents, collect water and discharge through grease interceptor to the sewer.
- Inspect and replace faulty pumps or hoses regularly to minimize the potential of releases and spills.
- Repair leaking equipment including valves, lines, seals, or pumps promptly.



Spill Response and Prevention Procedures

- Keep your spill prevention and plan up-to-date.
- Have an emergency plan, equipment and trained personnel ready at all times to deal immediately with major spills.
- Collect all spilled liquids and properly dispose of them.
- Store and maintain appropriate spill cleanup materials in a location known to all near the designated wash area.
- Ensure that vehicles transporting waste have spill prevention equipment that can prevent spills during transport. Spill prevention equipment includes:
  - ✓ Vehicles equipped with baffles for liquid waste; and
  - ✓ Trucks with sealed gates and spill guards for solid waste.



Material Handling and Waste Management

Litter Control

- Post "No Littering" signs and enforce anti-litter laws.
- Provide a sufficient number of litter receptacles for the facility.
- Clean out and cover litter receptacles frequently to prevent spillage.

Waste Collection

- Keep waste collection areas clean.

- Inspect solid waste containers for structural damage regularly. Repair or replace damaged containers as necessary.
- Secure solid waste containers; containers must be closed tightly when not in use.
- Do not fill waste containers with washout water or any other liquid.
- Ensure that only appropriate solid wastes are added to the solid waste container. Certain wastes such as hazardous wastes, appliances, fluorescent lamps, pesticides, etc., may not be disposed of in solid waste containers (see chemical/ hazardous waste collection section below).
- Do not mix wastes; this can cause chemical reactions, make recycling impossible, and complicate disposal. Affix labels to all waste containers.

Chemical/Hazardous Wastes

- Select designated hazardous waste collection areas on-site.
- Store hazardous materials and wastes in covered containers and protect them from vandalism.
- Place hazardous waste containers in secondary containment.
- Make sure that hazardous waste is collected, removed, and disposed of only at authorized disposal areas.
- Hazardous waste cannot be reused or recycled; it must be disposed of by a licensed hazardous waste hauler.



Employee Training Program

- Educate employees about pollution prevention measures and goals.
- Train employees how to properly handle and dispose of waste using the source control BMPs described above.
- Train employees and subcontractors in proper hazardous waste management.
- Use a training log or similar method to document training.
- Ensure that employees are familiar with the site's spill control plan and/or proper spill cleanup procedures.



Quality Assurance and Record Keeping

- Keep accurate maintenance logs that document minimum BMP activities performed for waste handling and disposal, types and quantities of waste disposed of, and any improvement actions.
- Keep accurate logs of spill response actions that document what was spilled, how it was cleaned up, and how the waste was disposed.

- Establish procedures to complete logs and file them in the central office.

Potential Capital Facility Costs and Operation & Maintenance Requirements

Facilities

- Capital costs will vary substantially depending on the size of the facility and the types of waste handled. Significant capital costs may be associated with reducing wastes by modifying processes or implementing closed-loop recycling.
- Many facilities will already have indoor covered areas where waste materials will be stored and will require no additional capital expenditures for providing cover.
- If outdoor storage of wastes is required, construction of berms or other means to prevent stormwater run-on and runoff may require appropriate constructed systems for containment.
- Capital investments will likely be required at some sites if adequate cover and containment facilities do not exist and can vary significantly depending upon site conditions.

Maintenance

- Check waste containers weekly for leaks and to ensure that lids are on tightly. Replace any that are leaking, corroded, or otherwise deteriorating.
- Sweep and clean the waste management area regularly. Use dry methods when possible (e.g., sweeping, use of absorbents) when cleaning around restaurant/food handling dumpster areas. If water must be used after sweeping/using absorbents, collect water and discharge through grease interceptor to the sewer.
- Inspect and replace faulty pumps or hoses regularly to minimize the potential of releases and spills.
- Repair leaking equipment including valves, lines, seals, or pumps promptly.

References and Resources

Minnesota Pollution Control Agency, *Industrial Stormwater Best Management Practices Guidebook*. Available online at: http://www.pca.state.mn.us/index.php/view-document.html?gid=10557.

New Jersey Department of Environmental Protection, 2013. *Basic Industrial Stormwater General Permit Guidance Document NJPDES General Permit No NJ0088315,* Revised. Available online at: http://www.nj.gov/dep/dwq/pdf/5G2_guidance_color.pdf.

Orange County Stormwater Program, Best Management Practices for Industrial/Commercial Business Activities. Available online at: http://ocwatersheds.com/documents/bmp/industrialcommercialbusinessesactivities

Oregon Department of Environmental Quality, 2013. *Industrial Stormwater Best Management Practices Manual- BMP 26 Fueling and Liquid Loading/Unloading Operations*. Available online at: http://www.deq.state.or.us/wq/wqpermit/docs/IndBMP021413.pdf.

Sacramento Stormwater Management Program. *Best Management Practices for Industrial Storm Water Pollution Control*. Available online at: http://www.msa.saccounty.net/sactostormwater/documents/guides/industrial-BMP-manual.pdf.

Sacramento County Environmental Management Stormwater Program: Best Management Practices. Available online at: http://www.emd.saccounty.net/EnvHealth/Stormwater/Stormwater-BMPs.html.

Santa Clara Valley Urban Runoff Pollution Prevention Program. http://www.scvurppp-w2k.com/

US EPA. National Pollutant Discharge Elimination System – Industrial Fact Sheet Series for Activities Covered by EPA's Multi Sector General Permit. Available online at: http://cfpub.epa.gov/npdes/stormwater/swsectors.cfm.

Safer Alternative Products SC-35

Description

Promote the use of less harmful products and products that contain little or no TMDL and 303(d) list pollutants. Alternatives exist for most product classes including chemical fertilizers, pesticides, cleaning solutions, janitorial chemicals, automotive and paint products, and consumables (batteries, fluorescent lamps).

Approach

Pattern a new program after the many established programs around the state and country. Integrate this best management practice as much as possible with existing programs at your facility.

Develop a comprehensive program based on:

- The "Precautionary Principle," which is an alternative to the "Risk Assessment" model that says it's acceptable to use a potentially harmful product until physical evidence of its harmful effects are established and deemed too costly from an environmental or public health perspective. For instance, a risk assessment approach might say it's acceptable to use a pesticide until there is direct proof of an environmental impact. The Precautionary Principle approach is used to evaluate whether a given product is safe, whether it is really necessary, and whether alternative products would perform just as well.
- Environmentally Preferable Purchasing Program to minimize the purchase of products containing hazardous ingredients used in the facility's custodial services, fleet maintenance, and facility maintenance in favor of using alternate products that pose less risk to employees and to the environment.
- Integrated Pest Management (IPM) or Less-Toxic Pesticide Program, which uses a pest management approach that minimizes the use of toxic chemicals and gets rid of pests

Objectives
■ *Educate*
■ *Reduce/Minimize*
■ *Product Substitution*

Targeted Constituents	
Sediment	
Nutrients	✓
Trash	
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Minimum BMPs Covered	
Good Housekeeping	
Preventative Maintenance	
Spill and Leak Prevention and Response	
Material Handling & Waste Management	
Erosion and Sediment Controls	
Employee Training Program	✓
Quality Assurance Record Keeping	

CASQA
CALIFORNIA STORMWATER QUALITY ASSOCIATION®

by methods that pose a lower risk to employees, the public, and the environment.

- Energy Efficiency Program including no-cost and low-cost energy conservation and efficiency actions that can reduce both energy consumption and electricity bills, along with long-term energy efficiency investments.

Consider the following mechanisms for developing and implementing a comprehensive program:

- Policies
- Procedures
  - ✓ Standard operating procedures (SOPs);
  - ✓ Purchasing guidelines and procedures; and
  - ✓ Bid packages (services and supplies).
- Materials
  - ✓ Preferred or approved product and supplier lists;
  - ✓ Product and supplier evaluation criteria;
  - ✓ Training sessions and manuals; and
  - ✓ Fact sheets for employees.

Implement this BMP in conjunction with the Vehicle and Equipment Management fact sheets (SC-20 – SC-22) and SC-41 Building and Grounds Maintenance.



Employee Training Program

- Employees who handle potentially harmful materials should be trained in the use of safer alternatives.
- Purchasing departments should be trained on safer alternative products and encouraged to procure less hazardous materials and products that contain little or no harmful substances or TMDL pollutants.
- Employees and contractors / service providers can both be educated about safer alternatives by using information developed by a number of organizations including the references and resources provided in this fact sheet.

Potential Limitations and Work-Arounds

Some facilities may have space constraints, limited staffing and time limitations that may preclude implementation of BMPs. Provided below are typical limitations and recommended "work-arounds"

- Alternative products may not be available, suitable, or effective in every case.

- ✓ Minimize use of hazardous/harmful products if no alternative product is available.

Regulatory Considerations

This BMP has no regulatory requirements unless local/municipal ordinance applies. Existing regulations already encourage facilities to reduce the use of hazardous materials through incentives such as reduced:

- Specialized equipment storage and handling requirements;
- Storm water runoff sampling requirements;
- Training and licensing requirements; and
- Record keeping and reporting requirements.

Cost Considerations

- The primary cost is for staff time to: 1) develop new policies and procedures and 2) educate purchasing departments and employees who handle potentially harmful materials about the availability, procurement, and use of safer alternatives.
- Some alternative products may be slightly more expensive than conventional products.

Supplemental Information

The following discussion provides some general information on safer alternatives. More specific information on particular hazardous materials and the available alternatives may be found in the references and resources listed below.

- Automotive products – Less toxic alternatives are not available for many automotive products, especially engine fluids. But there are alternatives to grease lubricants, car polishes, degreasers, and windshield washer solution. Refined motor oil is also available.
- Vehicle/Trailer lubrication – Fifth wheel bearings on trucks require routine lubrication. Adhesive lubricants are available to replace typical chassis grease.
- Cleaners – Vegetables-based or citrus-based soaps are available to replace petroleum-based soaps/detergents.
- Paint products – Water-based paints, wood preservatives, stains, and finishes with low VOC content are available.
- Pesticides – Specific alternative products or methods exist to control most insects, fungi, and weeds.
- Chemical Fertilizers – Compost and soil amendments are natural alternatives.
- Consumables – Manufacturers have either reduced or are in the process of reducing the amount of heavy metals in consumables such as batteries and fluorescent lamps.

All fluorescent lamps contain mercury, however low-mercury containing lamps are now available from most hardware and lighting stores. Fluorescent lamps are also more energy efficient than the average incandescent lamp.

- Janitorial chemicals – Even biodegradable soap can harm fish and wildlife before it biodegrades. Biodegradable does not mean non-toxic. Safer products and procedures are available for floor stripping and cleaning, as well as carpet, glass, metal, and restroom cleaning and disinfecting. Use paper products with post-consumer recycled content and implement electric had dryers.

Examples

There are a number of business and trade associations, and communities with effective programs. Some of the more prominent are listed below in the references and resources section.

References and Resources

Note: Many of these references provide alternative products for materials that typically are used inside and disposed to the sanitary sewer as well as alternatives to products that usually end up in the storm drain.

General Sustainable Practices and Pollution Prevention Including Pollutant-Specific Information

California Department of Toxic Substances Control, http://www.dtsc.ca.gov/PollutionPrevention/GreenTechnology/Index.cfm.

CalRecycle, http://www.calrecycle.ca.gov/Business/Regulated.htm.

City of Santa Monica Office of Sustainability and Environment, http://www.smgov.net/departments/ose/.

City of Palo Alto, http:// www.city.palo-alto.ca.us/cleanbay.

City and County of San Francisco, Department of the Environment, http://www.sfenvironment.org/toxics-health/greener-business-practices.

Green Business Program, http://www.greenbiz.ca.gov/GRlocal.html .

Product Stewardship Institute, http://www.productstewardship.us/index.cfm.

Sacramento Clean Water Business Partners. http://www.sacstormwater.org/CleanWaterBusinessPartners/CleanWaterBusinessPartners.html.

USEPA. National Pollutant Discharge Elimination System (NPDES) Stormwater Discharges From Industrial Facilities, http://cfpub.epa.gov/npdes/stormwater/indust.cfm.

USEPA Region IX Pollution Prevention Program, http://www.epa.gov/region9/waste/p2/business.html.

Western Sustainability and Pollution Prevention Network, http://wsppn.org/.

Metals (mercury, copper)

National Electrical Manufacturers Association – Environmental Stewardship, http://www.nema.org/Policy/Environmental-Stewardship/pages/default.aspx.

Sustainable Conservation, http://www.suscon.org.

Auto Recycling Project

Brake Pad Partnership

Pesticides and Chemical Fertilizers

Bio-Integral Resource Center, http://www.birc.org.

California Department of Pesticide Regulation, http://www.cdpr.ca.gov/dprprograms.htm.

University of California Statewide IPM Program, http://www.ipm.ucdavis.edu/default.html.

Dioxins

Bay Area Dioxins Project, http://www.abag.ca.gov/bayarea/dioxin/project_materials.htm.

Building & Grounds Maintenance SC-41

Description

Stormwater runoff from building and grounds maintenance activities can be contaminated with toxic hydrocarbons in solvents, fertilizers and pesticides, suspended solids, heavy metals, abnormal pH, and oils and greases. Utilizing the protocols in this fact sheet will prevent or reduce the discharge of pollutants to stormwater from building and grounds maintenance activities by washing and cleaning up with as little water as possible, following good landscape management practices, preventing and cleaning up spills immediately, keeping debris from entering the storm drains, and maintaining the stormwater collection system.

Approach

Reduce potential for pollutant discharge through source control pollution prevention and BMP implementation. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

General Pollution Prevention Protocols

- ☐ Switch to non-toxic chemicals for maintenance to the maximum extent possible.
- ☐ Choose cleaning agents that can be recycled.
- ☐ Encourage proper lawn management and landscaping, including use of native vegetation.
- ☐ Encourage use of Integrated Pest Management techniques for pest control.
- ☐ Encourage proper onsite recycling of yard trimmings.
- ☐ Recycle residual paints, solvents, lumber, and other material as much as possible.

Objectives
■ *Cover*
■ *Contain*
■ *Educate*
■ *Reduce/Minimize*
■ *Product Substitution*

Targeted Constituents	
Sediment	✓
Nutrients	✓
Trash	
Metals	✓
Bacteria	✓
Oil and Grease	
Organics	

Minimum BMPs Covered	
Good Housekeeping	✓
Preventative Maintenance	
Spill and Leak Prevention and Response	✓
Material Handling & Waste Management	✓
Erosion and Sediment Controls	
Employee Training Program	✓
Quality Assurance Record Keeping	✓

CASQA
CALIFORNIA STORMWATER QUALITY ASSOCIATION®

- Clean work areas at the end of each work shift using dry cleaning methods such as sweeping and vacuuming.



Good Housekeeping

Pressure Washing of Buildings, Rooftops, and Other Large Objects

- In situations where soaps or detergents are used and the surrounding area is paved, pressure washers must use a water collection device that enables collection of wash water and associated solids. A sump pump, wet vacuum or similarly effective device must be used to collect the runoff and loose materials. The collected runoff and solids must be disposed of properly.

- If soaps or detergents are not used, and the surrounding area is paved, wash runoff does not have to be collected but must be screened. Pressure washers must use filter fabric or some other type of screen on the ground and/or in the catch basin to trap the particles in wash water runoff.

- If you are pressure washing on a grassed area (with or without soap), runoff must be dispersed as sheet flow as much as possible, rather than as a concentrated stream. The wash runoff must remain on the grass and not drain to pavement.

Landscaping Activities

- Dispose of grass clippings, leaves, sticks, or other collected vegetation as garbage, or by composting. Do not dispose of collected vegetation into waterways or storm drainage systems.

- Use mulch or other erosion control measures on exposed soils. See also SC-40, Contaminated and Erodible Areas, for more information.

Building Repair, Remodeling, and Construction

- Do not dump any toxic substance or liquid waste on the pavement, the ground, or toward a storm drain.

- Use ground or drop cloths underneath outdoor painting, scraping, and sandblasting work, and properly dispose of collected material daily.

- Use a ground cloth or oversized tub for activities such as paint mixing and tool cleaning.

- Clean paintbrushes and tools covered with water-based paints in sinks connected to sanitary sewers or in portable containers that can be dumped into a sanitary sewer drain. Brushes and tools covered with non-water-based paints, finishes, or other materials must be cleaned in a manner that enables collection of used solvents (e.g., paint thinner, turpentine, etc.) for recycling or proper disposal.

- Use a storm drain cover, filter fabric, or similarly effective runoff control mechanism if dust, grit, wash water, or other pollutants may escape the work area and enter a catch basin. This is particularly necessary on rainy days. The containment device(s) must be in place at the beginning of the work day, and accumulated dirty runoff and

solids must be collected and disposed of before removing the containment device(s) at the end of the work day.

- If you need to de-water an excavation site, you may need to filter the water before discharging to a catch basin or off-site. If directed off-site, you should direct the water through hay bales and filter fabric or use other sediment filters or traps.
- Store toxic material under cover during precipitation events and when not in use. A cover would include tarps or other temporary cover material.

Mowing, Trimming, and Planting

- Dispose of leaves, sticks, or other collected vegetation as garbage, by composting or at a permitted landfill. Do not dispose of collected vegetation into waterways or storm drainage systems.
- Use mulch or other erosion control measures when soils are exposed.
- Place temporarily stockpiled material away from watercourses and drain inlets, and berm or cover stockpiles to prevent material releases to the storm drain system.
- Consider an alternative approach when bailing out muddy water: do not put it in the storm drain; pour over landscaped areas.
- Use hand weeding where practical.

Fertilizer and Pesticide Management

- Do not use pesticides if rain is expected.
- Do not mix or prepare pesticides for application near storm drains.
- Use the minimum amount needed for the job.
- Calibrate fertilizer distributors to avoid excessive application.
- Employ techniques to minimize off-target application (e.g., spray drift) of pesticides, including consideration of alternative application techniques.
- Apply pesticides only when wind speeds are low.
- Fertilizers should be worked into the soil rather than dumped or broadcast onto the surface.
- Irrigate slowly to prevent runoff and then only as much as is needed.
- Clean pavement and sidewalk if fertilizer is spilled on these surfaces before applying irrigation water.

Inspection

- Inspect irrigation system periodically to ensure that the right amount of water is being applied and that excessive runoff is not occurring. Minimize excess watering and repair leaks in the irrigation system as soon as they are observed.

Building & Grounds Maintenance SC-41



Spill Response and Prevention Procedures

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Place a stockpile of spill cleanup materials, such as brooms, dustpans, and vacuum sweepers (if desired) near the storage area where it will be readily accessible.
- Have employees trained in spill containment and cleanup present during the loading/unloading of dangerous wastes, liquid chemicals, or other materials.
- Familiarize employees with the Spill Prevention Control and Countermeasure Plan.
- Clean up spills immediately.



Material Handling and Waste Management

- Follow all federal, state, and local laws and regulations governing the use, storage, and disposal of fertilizers and pesticides and training of applicators and pest control advisors.
- Use less toxic pesticides that will do the job when applicable. Avoid use of copper-based pesticides if possible.
- Dispose of empty pesticide containers according to the instructions on the container label.
- Use up the pesticides. Rinse containers, and use rinse water as product. Dispose of unused pesticide as hazardous waste.
- Implement storage requirements for pesticide products with guidance from the local fire department and County Agricultural Commissioner. Provide secondary containment for pesticides.



Employee Training Program

- Educate and train employees on pesticide use and in pesticide application techniques to prevent pollution.
- Train employees and contractors in proper techniques for spill containment and cleanup.
- Be sure the frequency of training takes into account the complexity of the operations and the needs of individual staff.



Quality Assurance and Record Keeping

- Keep accurate logs that document maintenance activities performed and minimum BMP measures implemented.
- Keep accurate logs of spill response actions that document what was spilled, how it was cleaned up, and how the waste was disposed.
- Establish procedures to complete logs and file them in the central office.

Potential Capital Facility Costs and Operation & Maintenance Requirements

Facilities

- Additional capital costs are not anticipated for building and grounds maintenance. Implementation of the minimum BMPs described above should be conducted as part of regular site operations.

Maintenance

- Maintenance activities for the BMPs described above will be minimal, and no additional cost is anticipated.

Supplemental Information

Fire Sprinkler Line Flushing

Site fire sprinkler line flushing may be a source of non-stormwater runoff pollution. The water entering the system is usually potable water, though in some areas it may be non-potable reclaimed wastewater. There are subsequent factors that may drastically reduce the quality of the water in such systems. Black iron pipe is usually used since it is cheaper than potable piping, but it is subject to rusting and results in lower quality water. Initially, the black iron pipe has an oil coating to protect it from rusting between manufacture and installation; this will contaminate the water from the first flush but not from subsequent flushes. Nitrates, poly-phosphates and other corrosion inhibitors, as well as fire suppressants and antifreeze may be added to the sprinkler water system. Water generally remains in the sprinkler system a long time (typically a year) and between flushes may accumulate iron, manganese, lead, copper, nickel, and zinc. The water generally becomes anoxic and contains living and dead bacteria and breakdown products from chlorination. This may result in a significant BOD problem and the water often smells. Consequently dispose fire sprinkler line flush water into the sanitary sewer. Do not allow discharge to storm drain or infiltration due to potential high levels of pollutants in fire sprinkler line water.

References and Resources

City of Seattle, Seattle Public Utilities Department of Planning and Development, 2009. *Stormwater Manual Vol. 1 Source Control Technical Requirements Manual.*

Kennedy/Jenks Consultants, 2007. *The Truckee Meadows Industrial and Commercial Storm Water Best Management Practices Handbook*. Available online at: http://www.cityofsparks.us/sites/default/files/assets/documents/env-control/construction/TM-I-C_BMP_Handbook_2-07-final.pdf.

Orange County Stormwater Program, Best Management Practices for Industrial/Commercial Business Activities. Available online at: http://ocwatersheds.com/documents/bmp/industrialcommercialbusinessesactivities.

Sacramento Stormwater Management Program. *Best Management Practices for Industrial Storm Water Pollution Control*. Available online at:

http://www.msa.saccounty.net/sactostormwater/documents/guides/industrial-BMP-manual.pdf.

US EPA, 1997. *Best Management Practices Handbook for Hazardous Waste Containers*. Available online at: http://www.epa.gov/region6/6en/h/handbk4.pdf.

Ventura Countywide Stormwater Management Program Clean Business Fact Sheets. Available online at: http://www.vcstormwater.org/documents/programs_business/building.pdf.

Building Repair and Construction SC-42

Description

Site modifications are common, particularly at large industrial sites. The activity may vary from minor and normal building repair to major remodeling, or the construction of new facilities. These activities can generate pollutants including solvents, paints, paint and varnish removers, finishing residues, spent thinners, soap cleaners, kerosene, asphalt and concrete materials, adhesive residues, and old asbestos installation. Protocols in this fact sheet are intended to prevent or reduce the discharge of pollutants to stormwater from building repair, remodeling, and minor construction by using soil erosion controls, enclosing or covering building material storage areas, using good housekeeping practices, using safer alternative products, and training employees.

This fact sheet is intended to be used for minor repairs and construction. If major construction is required, the guidelines in the Construction BMP Handbook should be followed.

Approach

The BMP approach is to reduce potential for pollutant discharges through source control pollution prevention and BMP implementation. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

General Pollution Prevention Protocols

- ☐ Recycle residual paints, solvents, lumber, and other materials to the maximum extent practicable.
- ☐ Avoid outdoor repairs and construction during periods of wet weather.
- ☐ Use safer alternative products to the maximum extent practicable. See also SC-35 Safer Alternative Products for more information.

Objectives
■ *Cover*
■ *Contain*
■ *Educate*
■ *Reduce/Minimize*
■ *Product Substitution*

Targeted Constituents	
Sediment	✓
Nutrients	
Trash	✓
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Minimum BMPs Covered	
Good Housekeeping	✓
Preventative Maintenance	
Spill and Leak Prevention and Response	✓
Material Handling & Waste Management	✓
Erosion and Sediment Controls	✓
Employee Training Program	✓
Quality Assurance Record Keeping	✓

CASQA
CALIFORNIA STORMWATER QUALITY ASSOCIATION®

- Buy recycled products to the maximum extent practicable.
- Inform on-site contractors of company policy on these matters and include appropriate provisions in their contract to ensure certain proper housekeeping and disposal practices are implemented.
- Make sure that nearby storm drains are well marked to minimize the chance of inadvertent disposal of residual paints and other liquids.



Good Housekeeping

Repair & Remodeling

- Keep the work site clean and orderly. Remove debris in a timely fashion. Sweep and vacuum the area regularly to remove sediments and small debris.
- Cover raw materials of particular concern that must be left outside, particularly during the rainy season. See also SC-33 Outdoor Storage of Raw Materials for more information.
- Use equipment and tools such as bag sanders to reduce accumulation of debris.
- Limit/prohibit work on windy days; implement roll-down walls or other measures to reduce wind transport of pollutants.
- Do not dump waste liquids down the storm drain.
- Dispose of wash water, sweepings, and sediments properly.
- Store liquid materials properly that are normally used in repair and remodeling such as paints and solvents. See also SC-31 Outdoor Liquid Container Storage for more information.
- Sweep out rain gutters or wash the gutter and trap the particles at the outlet of the downspout. A sock or geofabric placed over the outlet may effectively trap the materials. If the downspout is tight lined, place a temporary plug at the first convenient point in the storm drain and pump out the water with a vactor truck, and clean the catch basin sump where you placed the plug.
- Clean the storm drain system in the immediate vicinity of the construction activity after it is completed. See also SC-44 Drainage System Maintenance for more information.

Painting

- Enclose painting operations consistent with local air quality regulations and OSHA.
- Local air pollution regulations may, in many areas of the state, specify painting procedures which if properly carried out are usually sufficient to protect water quality.
- Develop paint handling procedures for proper use, storage, and disposal of paints.

- Transport paint and materials to and from job sites in containers with secure lids and tied down to the transport vehicle.
- Test and inspect spray equipment prior to starting to paint. Tighten all hoses and connections and do not overfill paint containers.
- Mix paint indoors before using so that any spill will not be exposed to rain. Do so even during dry weather because cleanup of a spill will never be 100 percent effective.
- Transfer and load paint and hot thermoplastic away from storm drain inlets.
- Do not transfer or load paint near storm drain inlets.
- Plug nearby storm drain inlets prior to starting painting and remove plugs when job is complete when there is risk of a spill reaching storm drains.
- Cover nearby storm drain inlets prior to starting work if sand blasting is used to remove paint.
- Use a ground cloth to collect the chips if painting requires scraping or sand blasting of the existing surface. Dispose of the residue properly.
- Cover or enclose painting operations properly to avoid drift.
- Clean the application equipment in a sink that is connected to the sanitary sewer if using water based paints.
- Capture all cleanup-water and dispose of properly.
- Dispose of paints containing lead or tributyl tin and considered a hazardous waste properly.
- Store leftover paints if they are to be kept for the next job properly, or dispose properly.
- Recycle paint when possible. Dispose of paint at an appropriate household hazardous waste facility.



Spill Response and Prevention Procedures

- Keep your spill prevention and control plan up-to-date.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- Clean up spills immediately.
- Excavate and remove the contaminated (stained) soil if a spill occurs on dirt.



Material Handling and Waste Management

- Post “No Littering” signs and enforce anti-litter laws.

- Provide a sufficient number of litter receptacles for the facility.
- Clean out and cover litter receptacles frequently to prevent spillage.
- Keep waste collection areas clean.
- Inspect solid waste containers for structural damage regularly. Repair or replace damaged containers as necessary.
- Secure solid waste containers; containers must be closed tightly when not in use.
- Do not fill waste containers with washout water or any other liquid.
- Ensure that only appropriate solid wastes are added to the solid waste container. Certain wastes such as hazardous wastes, appliances, fluorescent lamps, pesticides, etc., may not be disposed of in solid waste containers (see chemical/ hazardous waste collection section below).
- Do not mix wastes; this can cause chemical reactions, make recycling impossible, and complicate disposal. Affix labels to all waste containers.
- Make sure that hazardous waste is collected, removed, and disposed of properly. See also SC-34, Waste Handling and Disposal for more information.



Sediment and Erosion Controls

- Limit disturbance to bare soils and preserve natural vegetation whenever possible. See also EC-2, Preservation of Existing Vegetation, in the Construction BMP Handbook.
- Stabilize loose soils by re-vegetating whenever possible. See also EC-4 Hydroseeding, in the Construction BMP Handbook.
- Utilize non-vegetative stabilization methods for areas prone to erosion where vegetative options are not feasible. Examples include:
  - ✓ Areas of vehicular or pedestrian traffic such as roads or paths;
  - ✓ Arid environments where vegetation would not provide timely ground coverage, or would require excessive irrigation;
  - ✓ Rocky substrate, infertile or droughty soils where vegetation would be difficult to establish; and
  - ✓ Areas where vegetation will not grow adequately within the construction time frame.

  There are several non-vegetative stabilization methods and selection should be based on site-specific conditions. See also EC-16 Non-Vegetative Stabilization, in the Construction BMP Handbook.

- Utilize chemical stabilization when needed. See also EC-5 Soil Binders, in the Construction BMP Handbook.
- Use geosynthetic membranes to control erosion if feasible. See also EC-7 Geotextiles and Mats, in the Construction BMP Handbook.
- Stabilize all roadways, entrances, and exits to sufficiently control discharges of erodible materials from discharging or being tracked off the site. See also TC 1-3 Tracking Control, in the Construction BMP Handbook.
- Refer to the supplemental information provided below for projects that involve more extensive soil disturbance activities.



Employee Training Program

- Educate employees about pollution prevention measures and goals.
- Train employees how to properly implement the source control BMPs described above. Detailed information for Sediment and Erosion Control BMPs is provided in the Construction BMP Handbook.
- Proper education of off-site contractors is often overlooked. The conscientious efforts of well trained employees can be lost by unknowing off-site contractors, so make sure they are well informed about pollutant source control responsibilities.
- Use a training log or similar method to document training.



Quality Assurance and Record Keeping

- Keep accurate maintenance logs that document minimum BMP activities performed for building repair and construction, types and quantities of waste disposed of, and any improvement actions.
- Keep accurate logs of spill response actions that document what was spilled, how it was cleaned up, and how the waste was disposed.
- Establish procedures to complete logs and file them in the central office.

Potential Limitations and Work-Arounds

Some facilities may have space constraints, limited staffing and time limitations that may preclude implementation of BMPs. Provided below are typical limitations and recommended "work-arounds."

- This BMP is for minor construction only. The State's General Construction Activity Stormwater Permit has more extensive requirements for larger projects that would disturb one or more acres of surface.
  - ✓ Refer to the companion "Construction Best Management Practice Handbook" which contains specific guidance and best management practices for larger-scale projects.

- Time constraints may require some outdoor repairs and construction during wet weather.
  - ✓ Require employees to understand and follow good housekeeping and spill and leak prevention BMPs.
  - ✓ Inspect sediment and erosion control BMPs daily during periods of wet weather and repair or improve BMP implementation as necessary.
- Hazardous waste that cannot be reused or recycled must be disposed of by a licensed hazardous waste hauler.
  - ✓ Minimize use of hazardous materials to the maximum extent practicable.
- Be certain that actions to help stormwater quality are consistent with Cal- and Fed-OSHA and air quality regulations.
- Prices for recycled/safer alternative materials and fluids may be higher than those of conventional materials.

Potential Capital Facility Costs and Operation & Maintenance Requirements

Facilities

- Limited capital investments may be required at some sites if adequate cover and containment facilities do not exist for construction materials and wastes.
- Purchase and installation of erosion and sediment controls, if needed will require additional capital investments, and this amount will vary depending on site characteristics and the types of BMPs being implemented.
- Minimize costs by maintaining existing vegetation and limiting construction operations on bare soils.

Maintenance

- The erosion and sediment control BMPs described above require periodic inspection and maintenance to remain effective. The cost of these actions will vary depending on site characteristics and the types of BMPs being implemented.
- Irrigation costs may be required to establish and maintain vegetation.

Supplemental Information

Soil/Erosion Control

If the work involves exposing large areas of soil, employ the appropriate soil erosion and control techniques. See the Construction Best Management Practice Handbook. If old buildings are being torn down and not replaced in the near future, stabilize the site using measures described in SC-40 Contaminated or Erodible Areas.

Building Repair and Construction SC-42

If a building is to be placed over an open area with a storm drainage system, make sure the storm inlets within the building are covered or removed, or the storm line is connected to the sanitary sewer. If because of the remodeling a new drainage system is to be installed or the existing system is to be modified, consider installing catch basins as they serve as effective "in-line" treatment devices. Include in the catch basin a "turn-down" elbow or similar device to trap floatables.

References and Resources

City of Seattle, Seattle Public Utilities Department of Planning and Development, 2009. *Stormwater Manual Vol. 1 Source Control Technical Requirements Manual*.

California Stormwater Quality Association, 2012. *Construction Stormwater Best Management Practice Handbook*. Available at http://www.casqa.org.

Kennedy/Jenks Consultants, 2007. *The Truckee Meadows Industrial and Commercial Storm Water Best Management Practices Handbook*. Available online at: http://www.cityofsparks.us/sites/default/files/assets/documents/env-control/construction/TM-I-C_BMP_Handbook_2-07-final.pdf.

Sacramento Stormwater Management Program. *Best Management Practices for Industrial Storm Water Pollution Control*. Available online at: http://www.msa.saccounty.net/sactostormwater/documents/guides/industrial-BMP-manual.pdf.

US EPA. *Construction Site Stormwater Runoff Control*. Available online at: http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=min_measure&min_measure_id=4.

Parking Area Maintenance SC-43

Description

Parking lots can contribute a number of substances, such as trash, suspended solids, hydrocarbons, oil and grease, and heavy metals that can enter receiving waters through stormwater runoff or non-stormwater discharges. The protocols in this fact sheet are intended to prevent or reduce the discharge of pollutants from parking areas and include using good housekeeping practices, following appropriate cleaning BMPs, and training employees.

BMPs for other outdoor areas on site (loading/unloading, material storage, and equipment operations) are described in SC-30 through SC-33.

Approach

The goal of this program is to ensure stormwater pollution prevention practices are considered when conducting activities on or around parking areas to reduce potential for pollutant discharge to receiving waters. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

General Pollution Prevention Protocols

- Encourage advanced designs and maintenance strategies for impervious parking lots. Refer to the treatment control BMP fact sheets in this manual for additional information.
- Keep accurate maintenance logs to evaluate BMP implementation.

Good Housekeeping

- Keep all parking areas clean and orderly. Remove debris, litter, and sediments in a timely fashion.
- Post "No Littering" signs and enforce anti-litter laws.

Objectives
Cover
Contain
Educate
Reduce/Minimize
Product Substitution

Targeted Constituents	
Sediment	✓
Nutrients	
Trash	✓
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Minimum BMPs Covered	
Good Housekeeping	✓
Preventative Maintenance	✓
Spill and Leak Prevention and Response	✓
Material Handling & Waste Management	
Erosion and Sediment Controls	
Employee Training Program	✓
Quality Assurance Record Keeping	✓

CASQA
CALIFORNIA STORMWATER QUALITY ASSOCIATION®

- ☐ Provide an adequate number of litter receptacles.
- ☐ Clean out and cover litter receptacles frequently to prevent spillage.

Preventative Maintenance

Inspection

Have designated personnel conduct inspections of parking facilities and stormwater conveyance systems associated with parking facilities on a regular basis.

- ☐ Inspect cleaning equipment/sweepers for leaks on a regular basis.

Surface Cleaning

- ☐ Use dry cleaning methods (e.g., sweeping, vacuuming) to prevent the discharge of pollutants into the stormwater conveyance system if possible.
- ☐ Establish frequency of public parking lot sweeping based on usage and field observations of waste accumulation.
- ☐ Sweep all parking lots at least once before the onset of the wet season.
- ☐ Dispose of parking lot sweeping debris and dirt at a landfill.
- ☐ Follow the procedures below if water is used to clean surfaces:
  - ✓ Block the storm drain or contain runoff.
  - ✓ Collect and pump wash water to the sanitary sewer or discharge to a pervious surface. Do not allow wash water to enter storm drains.
- ☐ Follow the procedures below when cleaning heavy oily deposits:
  - ✓ Clean oily spots with absorbent materials.
  - ✓ Use a screen or filter fabric over inlet, then wash surfaces.
  - ✓ Do not allow discharges to the storm drain.
  - ✓ Vacuum/pump discharges to a tank or discharge to sanitary sewer.
  - ✓ Dispose of spilled materials and absorbents appropriately.

Surface Repair

- ☐ Check local ordinance for SUSMP/LID ordinance.
- ☐ Preheat, transfer or load hot bituminous material away from storm drain inlets.
- ☐ Apply concrete, asphalt, and seal coat during dry weather to prevent contamination from contacting stormwater runoff.
- ☐ Cover and seal nearby storm drain inlets where applicable (with waterproof material or mesh) and manholes before applying seal coat, slurry seal, etc. Leave covers in

place until job is complete and all water from emulsified oil sealants has drained or evaporated. Clean any debris from these covered manholes and drains for proper disposal.

- Use only as much water as necessary for dust control during sweeping to avoid runoff.
- Catch drips from paving equipment that is not in use with pans or absorbent material placed under the machines. Dispose of collected material and absorbents properly.



Spill Response and Prevention Procedures

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Place a stockpile of spill cleanup materials where it will be readily accessible or at a central location.
- Clean up fluid spills immediately with absorbent rags or material.
- Dispose of spilled material and absorbents properly.



Employee Training Program

- Provide regular training to field employees and/or contractors regarding cleaning of paved areas and proper operation of equipment.
- Train employees and contractors in proper techniques for spill containment and cleanup.
- Use a training log or similar method to document training.



Quality Assurance and Record Keeping

- Keep accurate maintenance logs that document minimum BMP activities performed for parking area maintenance, types and quantities of waste disposed of, and any improvement actions.
- Keep accurate logs of spill response actions that document what was spilled, how it was cleaned up, and how the waste was disposed.
- Establish procedures to complete logs and file them in the central office.

Potential Capital Facility Costs and Operation & Maintenance Requirements

Facilities

- Capital investments may be required at some sites to purchase sweeping equipment, train sweeper operators, install oil/water/sand separators, or implement advanced BMPs. These costs can vary significantly depending upon site conditions and the amount of BMPs required.

Maintenance

- Sweep and clean parking lots regularly to minimize pollutant transport into storm drains from stormwater runoff.
- Clean out oil/water/sand separators regularly, especially after heavy storms.
- Maintain advanced BMPs such as vegetated swales, infiltration trenches, or detention basins as appropriate. Refer to the treatment control fact sheets for more information.

Supplemental Information

Advanced BMPs

Some parking areas may require advanced BMPs to further reduce pollutants in stormwater runoff, and a few examples are listed below. Refer to the Treatment Control Fact Sheets and the New Development and Redevelopment Manual for more information.

- When possible, direct sheet runoff to flow into biofilters (vegetated strip and swale) and/or infiltration devices.
- Utilize sand filters or oleophilic collectors for oily waste in low quantities.
- Arrange rooftop drains to prevent drainage directly onto paved surfaces.
- Design lot to include semi-permeable hardscape.

References and Resources

City of Seattle, Seattle Public Utilities Department of Planning and Development, 2009. *Stormwater Manual Vol. 1 Source Control Technical Requirements Manual.*

California Stormwater Quality Association, 2003. *New Development and Redevelopment Stormwater Best Management Practice Handbook*. Available online at: https://www.casqa.org/resources/bmp-handbooks/new-development-redevelopment-bmp-handbook.

Kennedy/Jenks Consultants, 2007. *The Truckee Meadows Industrial and Commercial Storm Water Best Management Practices Handbook*. Available online at: http://www.cityofsparks.us/sites/default/files/assets/documents/env-control/construction/TM-I-C_BMP_Handbook_2-07-final.pdf.

Orange County Stormwater Program, Best Management Practices for Industrial/Commercial Business Activities. Available online at: http://ocwatersheds.com/documents/bmp/industrialcommercialbusinessesactivities.

Pollution from Surface Cleaning Folder, 1996, 2003. Bay Area Stormwater Management Agencies Association. Available online at: http://basmaa.org/Portals/0/documents/pdf/Pollution%20from%20Surface%20Cleaning.pdf.

Sacramento Stormwater Management Program. *Best Management Practices for Industrial Storm Water Pollution Control*. Available online at: http://www.msa.saccounty.net/sactostormwater/documents/guides/industrial-BMP-manual.pdf.

The Storm Water Managers Resource Center, http://www.stormwatercenter.net.

US EPA. *Post-Construction Stormwater Management in New Development and Redevelopment*. BMP Fact Sheets. Available online at: http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=min_measure&min_measure_id=5.

Drainage System Maintenance SC-44

Description

As a consequence of its function, the stormwater drainage facilities on site convey stormwater that may contain certain pollutants either to the offsite conveyance system that collects and transports urban runoff and stormwater, or directly to receiving waters. The protocols in this fact sheet are intended to reduce pollutants leaving the site to the offsite drainage infrastructure or to receiving waters through proper on-site conveyance system operation and maintenance. The targeted constituents will vary depending on site characteristics and operations.

Approach

Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

General Pollution Prevention Protocols

- ☐ Maintain catch basins, stormwater inlets, and other stormwater conveyance structures on a regular basis to remove pollutants, reduce high pollutant concentrations during the first flush of storms, prevent clogging of the downstream conveyance system, restore catch basins' sediment trapping capacity, and ensure the system functions properly hydraulically to avoid flooding.
- ☐ Develop and follow a site specific drainage system maintenance plan that describes maintenance locations, methods, required equipment, water sources, sediment collection areas, disposal requirements, and any other pertinent information.

Good Housekeeping

Illicit Connections and Discharges

- ☐ Look for evidence of illegal discharges or illicit connections during routine maintenance of conveyance system and drainage structures:

Objectives
■ *Cover*
■ *Contain*
■ *Educate*
■ *Reduce/Minimize*

Targeted Constituents	
Sediment	✓
Nutrients	✓
Trash	✓
Metals	✓
Bacteria	✓
Oil and Grease	✓
Organics	✓

Minimum BMPs Covered	
Good Housekeeping	✓
Preventative Maintenance	✓
Spill and Leak Prevention and Response	✓
Material Handling & Waste Management	
Erosion and Sediment Controls	
Employee Training Program	✓
Quality Assurance Record Keeping	✓

CASQA
CALIFORNIA STORMWATER QUALITY ASSOCIATION®

- ✓ Identify evidence of spills such as paints, discoloring, odors, etc.
- ✓ Record locations of apparent illegal discharges/illicit connections.
- ✓ Track flows back to potential discharges and conduct aboveground inspections. This can be done through visual inspection of upgradient manholes or alternate techniques including zinc chloride smoke testing, fluorometric dye testing, physical inspection testing, or television camera inspection.
- ✓ Eliminate the discharge once the origin of flow is established.

- ☐ Stencil or demarcate storm drains, where applicable, to prevent illegal disposal of pollutants. Storm drain inlets should have messages such as "Dump No Waste Drains to Stream" or similar stenciled next to them to warn against ignorant or intentional dumping of pollutants into the storm drainage system.
- ☐ Refer to fact sheet SC-10 Non-Stormwater Discharges for additional information.

Illegal Dumping

- ☐ Inspect and clean up hot spots and other storm drainage areas regularly where illegal dumping and disposal occurs.
- ☐ Establish a system for tracking incidents. The system should be designed to identify the following:
  - ✓ Illegal dumping hot spots;
  - ✓ Types and quantities (in some cases) of wastes;
  - ✓ Patterns in time of occurrence (time of day/night, month, or year);
  - ✓ Mode of dumping (abandoned containers, "midnight dumping" from moving vehicles, direct dumping of materials, accidents/spills); and
  - ✓ Responsible parties.
- ☐ Post "No Dumping" signs in problem areas with a phone number for reporting dumping and disposal. Signs should also indicate fines and penalties for illegal dumping.
- ☐ Refer to fact sheet SC-10 Non-Stormwater Discharges for additional information.



Preventative Maintenance

Catch Basins/Inlet Structures

- ☐ Staff should regularly inspect facilities to ensure compliance with the following:
  - ✓ Immediate repair of any deterioration threatening structural integrity.
  - ✓ Cleaning before the sump is 40% full. Catch basins should be cleaned as frequently as needed to meet this standard.

- Clean catch basins, storm drain inlets, and other conveyance structures before the wet season to remove sediments and debris accumulated during the summer.
- Conduct inspections more frequently during the wet season for problem areas where sediment or trash accumulates more often. Prioritize storm drain inlets; clean and repair as needed.
- Keep accurate logs of the number of catch basins cleaned.
- Store wastes collected from cleaning activities of the drainage system in appropriate containers or temporary storage sites in a manner that prevents discharge to the storm drain.
- Dewater the wastes if necessary with outflow into the sanitary sewer if permitted. Water should be treated with an appropriate filtering device prior to discharge to the sanitary sewer. If discharge to the sanitary sewer is not allowed, water should be pumped or vacuumed to a tank and properly disposed. Do not dewater near a storm drain or stream.

Storm Drain Conveyance System

- Locate reaches of storm drain with deposit problems and develop a flushing schedule that keeps the pipe clear of excessive buildup.
- Collect and pump flushed effluent to the sanitary sewer for treatment whenever possible.

Pump Stations

- Clean all storm drain pump stations prior to the wet season to remove silt and trash.
- Do not allow discharge to reach the storm drain system when cleaning a storm drain pump station or other facility.
- Conduct routine maintenance at each pump station.
- Inspect, clean, and repair as necessary all outlet structures prior to the wet season.

Open Channel

- Modify storm channel characteristics to improve channel hydraulics, increase pollutant removals, and enhance channel/creek aesthetic and habitat value.
- Conduct channel modification/improvement in accordance with existing laws. Any person, government agency, or public utility proposing an activity that will change the natural state of any river, stream, or lake in California, must enter into a Steam or Lake Alteration Agreement with the Department of Fish and Wildlife. The developer-applicant should also contact local governments (city, county, special districts), other state agencies (SWRCB, RWQCB, Department of Forestry, Department of Water Resources), and Army Corps of Engineers and USFWS.



Spill Response and Prevention Procedures

- Keep your spill prevention control plan up-to-date.

- Investigate all reports of spills, leaks, and/or illegal dumping promptly.
- Place a stockpile of spill cleanup materials where it will be readily accessible or at a central location.
- Clean up all spills and leaks using "dry" methods (with absorbent materials and/or rags) or dig up, remove, and properly dispose of contaminated soil.



Employee Training Program

- Educate employees about pollution prevention measures and goals.
- Train employees how to properly handle and dispose of waste using the source control BMPs described above.
- Train employees and subcontractors in proper hazardous waste management.
- Use a training log or similar method to document training.
- Ensure that employees are familiar with the site's spill control plan and/or proper spill cleanup procedures.
- Have staff involved in detection and removal of illicit connections trained in the following:
  - ✓ OSHA-required Health and Safety Training (29 CFR 1910.120) plus annual refresher training (as needed).
  - ✓ OSHA Confined Space Entry training (Cal-OSHA Confined Space, Title 8 and Federal OSHA 29 CFR 1910.146).
  - ✓ Procedural training (field screening, sampling, smoke/dye testing, TV inspection).



Quality Assurance and Record Keeping

- Keep accurate maintenance logs that document minimum BMP activities performed for drainage system maintenance, types and quantities of waste disposed of, and any improvement actions.
- Keep accurate logs of spill response actions that document what was spilled, how it was cleaned up, and how the waste was disposed.
- Keep accurate logs of illicit connections, illicit discharges, and illegal dumping into the storm drain system including how wastes were cleaned up and disposed.
- Establish procedures to complete logs and file them in the central office.

Potential Limitations and Work-Arounds

Provided below are typical limitations and recommended "work-arounds" for drainage system maintenance:

- Clean-up activities may create a slight disturbance for local aquatic species. Access to items and material on private property may be limited. Trade-offs may exist between channel hydraulics and water quality/riparian habitat. If storm channels or basins are recognized as wetlands, many activities, including maintenance, may be subject to regulation and permitting.

  - ✓ Perform all maintenance onsite and do not flush accumulated material downstream to private property or riparian habitats.

- Storm drain flushing is most effective in small diameter pipes (36-inch diameter pipe or less, depending on water supply and sediment collection capacity). Other considerations associated with storm drain flushing may include the availability of a water source, finding a downstream area to collect sediments, and liquid/sediment disposal.

  - ✓ Develop and follow a site specific drainage system maintenance plan that describes maintenance locations, methods, required equipment, water sources, sediment collection areas, disposal requirements, and any other pertinent information.

- Regulations may include adoption of substantial penalties for illegal dumping and disposal.

  - ✓ Do not dump illegal materials anywhere onsite.

  - ✓ Identify illicit connections, illicit discharge, and illegal dumping.

  - ✓ Cleanup spills immediately and properly dispose of wastes.

- Local municipal codes may include sections prohibiting discharge of soil, debris, refuse, hazardous wastes, and other pollutants into the sanitary sewer system.

  - ✓ Collect all materials and pollutants accumulated in drainage system and dispose of according to local regulations.

  - ✓ Install debris excluders in areas with a trash TMDL.

Potential Capital Facility Costs and Operation & Maintenance Requirements

Facilities

- Capital costs will vary substantially depending on the size of the facility and characteristics of the drainage system. Significant capital costs may be associated with purchasing water trucks, vacuum trucks, and any other necessary cleaning equipment or improving the drainage infrastructure to reduce the potential .

- Developing and implementing a site specific drainage system maintenance plan will require additional capital if a similar program is not already in place.

Maintenance

- Two-person teams may be required to clean catch basins with vactor trucks.
- Teams of at least two people plus administrative personnel are required to identify illicit discharges, depending on the complexity of the storm sewer system.
- Arrangements must be made for proper disposal of collected wastes.
- Technical staff are required to detect and investigate illegal dumping violations.
- Methods used for illicit connection detection (smoke testing, dye testing, visual inspection, and flow monitoring) can be costly and time-consuming. Site-specific factors, such as the level of impervious area, the density and ages of buildings, and type of land use will determine the level of investigation necessary.

Supplemental Information

Storm Drain Flushing

Flushing is a common maintenance activity used to improve pipe hydraulics and to remove pollutants in storm drainage systems. Flushing may be designed to hydraulically convey accumulated material to strategic locations, such as an open channel, another point where flushing will be initiated, or the sanitary sewer and the treatment facilities, thus preventing re-suspension and overflow of a portion of the solids during storm events. Flushing prevents "plug flow" discharges of concentrated pollutant loadings and sediments. Deposits can hinder the designed conveyance capacity of the storm drain system and potentially cause backwater conditions in severe cases of clogging.

Storm drain flushing usually takes place along segments of pipe with grades that are too flat to maintain adequate velocity to keep particles in suspension. An upstream manhole is selected to place an inflatable device that temporarily plugs the pipe. Further upstream, water is pumped into the line to create a flushing wave. When the upstream reach of pipe is sufficiently full to cause a flushing wave, the inflated device is rapidly deflated with the assistance of a vacuum pump, thereby releasing the backed up water and resulting in the cleaning of the storm drain segment.

To further reduce impacts of stormwater pollution, a second inflatable device placed well downstream may be used to recollect the water after the force of the flushing wave has dissipated. A pump may then be used to transfer the water and accumulated material to the sanitary sewer for treatment. In some cases, an interceptor structure may be more practical or required to recollect the flushed waters.

It has been found that cleansing efficiency of periodic flush waves is dependent upon flush volume, flush discharge rate, sewer slope, sewer length, sewer flow rate, sewer diameter, and population density. As a rule of thumb, the length of line to be flushed should not exceed 700 feet. At this maximum recommended length, the percent removal efficiency ranges between 65-75% for organics and 55-65% for dry weather grit/inorganic material. The percent removal efficiency drops rapidly beyond that. Water is commonly supplied by a water truck, but fire hydrants can also supply water. To make the best use of water, it is recommended that reclaimed water be used if allowed or that fire hydrant line flushing coincide with storm sewer flushing.

References and Resources

City of Seattle, Seattle Public Utilities Department of Planning and Development, 2009. *Stormwater Manual Vol. 1 Source Control Technical Requirements Manual*.

Knox County Tennessee *Stormwater Management Manual* Chapter 5 Drainage System Maintenance, 2008. Available online at: http://www.knoxcounty.org/stormwater/manual/Volume%201/knoxco_swmm_v1_chap5_jan2008.pdf.

US EPA. Storm Drain System Cleaning, 2012. Available online at: http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=browse&Rbutton=detail&bmp=102.

Efficient Irrigation SD-12



Design Objectives

- ☑ Maximize Infiltration
- ☑ Provide Retention
- ☑ Slow Runoff
- Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- Contain Pollutants
- Collect and Convey

Description

Irrigation water provided to landscaped areas may result in excess irrigation water being conveyed into stormwater drainage systems.

Approach

Project plan designs for development and redevelopment should include application methods of irrigation water that minimize runoff of excess irrigation water into the stormwater conveyance system.

Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment. (Detached residential single-family homes are typically excluded from this requirement.)

Design Considerations

Designing New Installations

The following methods to reduce excessive irrigation runoff should be considered, and incorporated and implemented where determined applicable and feasible by the Permittee:

- Employ rain-triggered shutoff devices to prevent irrigation after precipitation.
- Design irrigation systems to each landscape area's specific water requirements.
- Include design featuring flow reducers or shutoff valves triggered by a pressure drop to control water loss in the event of broken sprinkler heads or lines.
- Implement landscape plans consistent with County or City water conservation resolutions, which may include provision of water sensors, programmable irrigation times (for short cycles), etc.

CASQA
CALIFORNIA STORMWATER QUALITY ASSOCIATION

- Design timing and application methods of irrigation water to minimize the runoff of excess irrigation water into the storm water drainage system.
- Group plants with similar water requirements in order to reduce excess irrigation runoff and promote surface filtration. Choose plants with low irrigation requirements (for example, native or drought tolerant species). Consider design features such as:
  - Using mulches (such as wood chips or bar) in planter areas without ground cover to minimize sediment in runoff
  - Installing appropriate plant materials for the location, in accordance with amount of sunlight and climate, and use native plant materials where possible and/or as recommended by the landscape architect
  - Leaving a vegetative barrier along the property boundary and interior watercourses, to act as a pollutant filter, where appropriate and feasible
  - Choosing plants that minimize or eliminate the use of fertilizer or pesticides to sustain growth
- Employ other comparable, equally effective methods to reduce irrigation water runoff.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Maintenance Bays & Docks SD-31



Design Objectives

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Land Coverage
- ☑ Prohibit Dumping of Improper Materials
- ☑ Contain Pollutants
- Collect and Convey

Description

Several measures can be taken to prevent operations at maintenance bays and loading docks from contributing a variety of toxic compounds, oil and grease, heavy metals, nutrients, suspended solids, and other pollutants to the stormwater conveyance system.

Approach

In designs for maintenance bays and loading docks, containment is encouraged. Preventative measures include overflow containment structures and dead-end sumps. However, in the case of loading docks from grocery stores and warehouse/distribution centers, engineered infiltration systems may be considered.

Suitable Applications

Appropriate applications include commercial and industrial areas planned for development or redevelopment.

Design Considerations

Design requirements for vehicle maintenance and repair are governed by Building and Fire Codes, and by current local agency ordinances, and zoning requirements. The design criteria described in this fact sheet are meant to enhance and be consistent with these code requirements.

Designing New Installations

Designs of maintenance bays should consider the following:

- Repair/maintenance bays and vehicle parts with fluids should be indoors; or designed to preclude urban run-on and runoff.
- Repair/maintenance floor areas should be paved with Portland cement concrete (or equivalent smooth impervious surface).

CASQA
CALIFORNIA STORMWATER QUALITY ASSOCIATION

- Repair/maintenance bays should be designed to capture all wash water leaks and spills. Provide impermeable berms, drop inlets, trench catch basins, or overflow containment structures around repair bays to prevent spilled materials and wash-down waters form entering the storm drain system. Connect drains to a sump for collection and disposal. Direct connection of the repair/maintenance bays to the storm drain system is prohibited. If required by local jurisdiction, obtain an Industrial Waste Discharge Permit.

- Other features may be comparable and equally effective.

The following designs of loading/unloading dock areas should be considered:

- Loading dock areas should be covered, or drainage should be designed to preclude urban run-on and runoff.

- Direct connections into storm drains from depressed loading docks (truck wells) are prohibited.

- Below-grade loading docks from grocery stores and warehouse/distribution centers of fresh food items should drain through water quality inlets, or to an engineered infiltration system, or an equally effective alternative. Pre-treatment may also be required.

- Other features may be comparable and equally effective.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Additional Information

Stormwater and non-stormwater will accumulate in containment areas and sumps with impervious surfaces. Contaminated accumulated water must be disposed of in accordance with applicable laws and cannot be discharged directly to the storm drain or sanitary sewer system without the appropriate permit.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Trash Storage Areas SD-32

Description

Trash storage areas are areas where a trash receptacle (s) are located for use as a repository for solid wastes. Stormwater runoff from areas where trash is stored or disposed of can be polluted. In addition, loose trash and debris can be easily transported by water or wind into nearby storm drain inlets, channels, and/or creeks. Waste handling operations that may be sources of stormwater pollution include dumpsters, litter control, and waste piles.

Approach

This fact sheet contains details on the specific measures required to prevent or reduce pollutants in stormwater runoff associated with trash storage and handling. Preventative measures including enclosures, containment structures, and impervious pavements to mitigate spills, should be used to reduce the likelihood of contamination.

Design Objectives

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- ☑ Contain Pollutants
- Collect and Convey

Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment. (Detached residential single-family homes are typically excluded from this requirement.)

Design Considerations

Design requirements for waste handling areas are governed by Building and Fire Codes, and by current local agency ordinances and zoning requirements. The design criteria described in this fact sheet are meant to enhance and be consistent with these code and ordinance requirements. Hazardous waste should be handled in accordance with legal requirements established in Title 22, California Code of Regulation.

Wastes from commercial and industrial sites are typically hauled by either public or commercial carriers that may have design or access requirements for waste storage areas. The design criteria in this fact sheet are recommendations and are not intended to be in conflict with requirements established by the waste hauler. The waste hauler should be contacted prior to the design of your site trash collection areas. Conflicts or issues should be discussed with the local agency.

Designing New Installations

Trash storage areas should be designed to consider the following structural or treatment control BMPs:

- Design trash container areas so that drainage from adjoining roofs and pavement is diverted around the area(s) to avoid run-on. This might include berming or grading the waste handling area to prevent run-on of stormwater.
- Make sure trash container areas are screened or walled to prevent off-site transport of trash.

CASQA
CALIFORNIA STORMWATER QUALITY ASSOCIATION

- Use lined bins or dumpsters to reduce leaking of liquid waste.
- Provide roofs, awnings, or attached lids on all trash containers to minimize direct precipitation and prevent rainfall from entering containers.
- Pave trash storage areas with an impervious surface to mitigate spills.
- Do not locate storm drains in immediate vicinity of the trash storage area.
- Post signs on all dumpsters informing users that hazardous materials are not to be disposed of therein.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Additional Information

Maintenance Considerations

The integrity of structural elements that are subject to damage (i.e., screens, covers, and signs) must be maintained by the owner/operator. Maintenance agreements between the local agency and the owner/operator may be required. Some agencies will require maintenance deed restrictions to be recorded of the property title. If required by the local agency, maintenance agreements or deed restrictions must be executed by the owner/operator before improvement plans are approved.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

APPENDIX F

Infiltration Report

Updated Geotechnical Engineering Investigation

Proposed Industrial Warehouse Development
10941 W. Los Angeles Avenue
Moorpark, California

Amir Development Company
8730 Wilshire Boulevard, Suite 300
Beverly Hills, California 90211

Attn: Mr. Steven Juhnke

Project Number 21889-20
April 8, 2022

NorCal Engineering

NorCal Engineering

Soils and Geotechnical Consultants
10641 Humbolt Street Los Alamitos, CA 90720
(562) 799-9469 Fax (562) 799-9459

April 8, 2022 Project Number 21889-20

Amir Development Company
8730 Wilshire Boulevard, Suite 300
Beverly Hills, California 90211

Attn: Mr. Steven Juhnke

RE: **Updated Geotechnical Engineering Investigation** - Proposed Industrial Warehouse Development - Located at 10941 W. Los Angeles Avenue, in the City of Moorpark, California

Dear Mr. Juhnke:

Pursuant to your request, this firm has performed a Geotechnical Engineering Investigation for the above referenced project in accordance with your approval of our proposals dated February 16, 2022 and March 8, 2022. The purpose of this investigation is to evaluate the geotechnical conditions of the subject site and to provide updated recommendations for the proposed industrial warehouse development.

The scope of work included the following: 1) site reconnaissance; 2) subsurface geotechnical exploration and sampling; 3) laboratory testing; 4) soil infiltration testing; 5) engineering analysis of field and laboratory data; 5) preparation of a geotechnical engineering report. It is the opinion of this firm that the proposed development is feasible from a geotechnical standpoint provided that the recommendations presented in this report are followed in the design and construction of the project.

1.0 Project Description

It is proposed to construct an industrial warehouse development consisting of 90,566 square feet building as shown on the attached Site Plan by HPA Architecture. The proposed structure will be supported by a conventional slab-on-grade foundation system with perimeter-spread footings and isolated interior footings. Other improvements will include asphalt and concrete pavement areas, retaining walls, hardscape and landscaping. It is assumed that the proposed grading for the development will consist of minor cut and fill procedures on the order of a few feet to achieve finished grade elevations. Final building plans shall be reviewed by this firm prior to submittal for city/county approval to determine the need for any additional study and revised recommendations pertinent to the proposed development, if necessary.

2.0 Site Description

The 5.65-acre subject property is located within the 10500 block and north side of Los Angeles Avenue, in the City of Moorpark. The generally rectangular-shaped parcel is elongated in a north to south direction with topography of the relatively level property descending slightly from back to front direction on the order of a few feet. The site is currently occupied an undeveloped parcel of land covered with a low vegetation growth of natural grasses and weeds.

3.0 Site Exploration

The investigation was initially performed on June 25, 2020 with additional exploratory work completed later on March 24 and 25, 2022. The field investigation consisted of the placement of two (2) recent electronic cone penetrometers (CPT) both to depths of 50 feet, six (6) subsurface exploratory borings by a truck mounted drill rig with eight-inch outside diameter hollow-stem, continuous flight augers and a hand operated auger to depths ranging between 5 and 50 feet and five (5) exploratory trenches by a backhoe to depths ranging between 10 and 20 feet below current ground elevations.

The CPT consists of advancing a cone-tipped cylindrical probe into the ground while simultaneously measuring the resulting resistance to penetration. An on-field computer generated CPT log measures the penetration resistance values and inferred soil description. The boring and trench explorations were visually classified and logged by a field engineer with locations of the subsurface explorations shown on the attached Site Plan.

The field explorations revealed the existing earth materials to consist of fill and natural soil. Detailed descriptions of the subsurface conditions are listed on the boring logs in Appendix A. It should be noted that the transition from one soil type to another as shown on the boring logs is approximate and may in fact be a gradual transition. The soils encountered are described as follows:

Fill: A fill soil classifying as a brown, fine to medium grained, silty SAND was encountered to a depth of one foot below ground surface. These soils were noted to be loose and dry.

Natural: A natural undisturbed soil classifying as a brown, fine to coarse grained, silty SAND was encountered beneath the fill soils to a depth of 12 to 14 feet. The native soils were observed to be medium dense and moist. Deeper soils consisted of sandy to clayey silts to sands which were noted to depths of 43 to 50 feet that are medium dense to dense and moist to wet.

The overall engineering characteristics of the earth material were relatively uniform with each excavation. Groundwater was encountered at a depth of 23 feet below ground surface in Borings B-3 and B-6 and some caving of the cohesionless soils occurred to the depth of our borings. The subsurface conditions are shown graphically on Section A-A, Figure 2.

4.0 Laboratory Tests

Relatively undisturbed samples of the subsurface soils were obtained to perform laboratory testing and analysis for direct shear, consolidation tests, and to determine in-place moisture/densities. These relatively undisturbed ring samples were obtained by driving a thin-walled steel sampler lined with one-inch long brass rings with an inside diameter of 2.42 inches into the undisturbed soils.

Standard penetration tests were obtained by driving a steel sampler unlined with an inside diameter of 1.5 inches into the soils. This standard penetrometer sampler was driven a total of eighteen inches with blow counts tallied every six inches. Blow count data is given on the Boring Logs in Appendix A. Bulk bag samples were obtained in the upper soils for expansion index tests and maximum density tests. All test results are included in Appendix B, unless otherwise noted.

4.1 **Field Moisture Content** (ASTM: D 2216) and the dry density of the ring samples were determined in the laboratory. This data is listed on the logs of explorations.

4.2 **Sieve analyses** (ASTM: D 422-63) and the percent by weight of soil finer than the No. 200 sieve (ASTM: 1140) were performed on selected soil samples. These results are shown later within the body of this report.

4.3 **Maximum Density tests** (ASTM: D 1557) were performed on typical samples of the upper soils. Results of these tests are shown on Table I.

4.4 **Expansion Index tests** (ASTM: D 4829) were performed on remolded samples of the upper soils to determine expansive characteristics. Results of these tests are provided on Table II.

4.5 **Atterberg Limits** (ASTM: D 4318) consisting of liquid limit, plastic limit and plasticity index were performed on representative soil samples. Results are shown on Table III.

4.6 **Corrosion tests** consisting of sulfate, pH, resistivity and chloride analysis to determine potential corrosive effects of soils on concrete and underground utilities. Test results are provided on Table IV.

4.7 **R-Value test** per California Test Method 301 was performed on a representative sample, which may be anticipated to be near subgrade to determine pavement design. Results are provided within the pavement design section of the report.

4.8 **Direct Shear tests** (ASTM: D 3080) were performed on undisturbed and/or remolded samples of the subsurface soils. The test is performed under saturated conditions at loads of 1,000 lbs./sq.ft., 2,000 lbs./sq.ft., and 3,000 lbs./sq.ft. with results shown on Plate A.

4.9 **Consolidation tests** (ASTM: D 2435) were performed on undisturbed samples to determine the differential and total settlement which may be anticipated based upon the proposed loads. Water was added to the samples at a surcharge of one KSF and the settlement curves are plotted on Plates B and C.

5.0 Seismicity Evaluation

The proposed development lies outside of any Alquist Priolo Special Studies Zone and the potential for damage due to direct fault rupture is considered unlikely. The nearest fault is located less than 2 kilometers from the site and is capable of producing a Magnitude 6.7 earthquake. Ground shaking originating from earthquakes along other active faults in the region is expected to induce lower horizontal accelerations due to smaller anticipated earthquakes and/or greater distances to other faults. The following seismic design acceleration parameters for the project site are provided below based on the American Society of Civil Engineers (ASCE) website, https://asce7hazardtool.online/. The ASCE/SEI 7-22 report is attached is Appendix C.

Seismic Design Acceleration Parameters

Latitude	34.280
Longitude	-118.912
Site Class	D
Risk Category	II
Peak Ground Acceleration	PGA_M = 0.83
Adjusted Maximum Acceleration	S_{MS} = 2.15 S_{M1} = 1.69
Design Spectral Response Acceleration Parameters	S_{DS} = 1.44 S_{D1} = 1.13
Mapped Spectral Response Acceleration	S_S = 2.10 S_1 = 0.77

Use of these values is dependent on the latest requirements of the ASCE, 11-4.8, Exception 2 that requires the value of the seismic response coefficient C_s be determined by Equation 12.8.2 for values of $T \leq 1.5T_s$ and taken as equal to 1.5 times the value computed in accordance with either 12.8-3 for $T_L \geq T \geq 1.5T_s$ or Equation 12.8-4 for $T > T_L$. Computations and verification of these conditions is referred to the structural engineer.

6.0 Liquefaction Evaluation

The site is expected to experience ground shaking and earthquake activity that is typical of Southern California area. It is during severe ground shaking that loose, granular soils below the groundwater table can liquefy. A review of the exploratory boring log and the laboratory test results on selected soil samples obtained indicate the following soil classifications, field blowcounts and amounts of fines passing through the No. 200 sieve.

Field Blowcount and Gradation Data

Boring No.	Classification	Blowcounts (blows/ft)	Relative Density	% Passing No. 200 Sieve
B-3 @ 5'	SM	7	Medium Dense	15
B-3 @ 10'	SM	9	Medium Dense	31
B-3 @ 15'	ML/CL	4	Firm	61
B-3 @ 20'	CL	10	Medium Stiff	66
B-3 @ 25'	SM/SW	16	Medium Dense	8
B-3 @ 30'	CL	12	Firm	66
B-3 @ 35'	SW	21	Dense	4
B-3 @ 40'	SW	21	Dense	4
B-3 @ 45'	SW	32	Dense	7
B-3 @ 50'	SW	30	Dense	8

Based upon information in the California Division of Mines and Geology "Seismic Hazard Zone Map – Moorpark Quadrangle", dated November 17, 2000, the subject site is situated in an area of historic occurrence of liquefaction, or local geological, geotechnical and groundwater conditions to indicate a potential for permanent ground displacement.

Based on the California Division of Mines and Geology Seismic Hazard Zone Report for the Moorpark 7.5 Minute Quadrangle, the site is mapped with a historic groundwater depth of 20 feet deep. Our liquefaction evaluation utilized the nearest mode of predominate Magnitude 6.7 Mw earthquake in our earthquake in our calculations. The analysis indicates the potential for liquefaction at this site to be moderate based upon a historic groundwater depth of 20 feet deep and a Peak Ground Acceleration (PGA_M) of 0.83g.

The associated seismic-induced settlements would be on the order of 3½ inches and would occur rather uniformly across the site, as shown on Section A-A. Differential settlements would be on the order of 1¾ inch over a 50-foot (horizontal) distance in the building pad area.

It is recommended that a stiffened foundation system be utilized for the proposed structure to mitigate for the seismic-induced settlements. The stiffened system shall consist of a mat foundation at least 12 inches thick to support the new structure. Our seismic settlement calculations are included in Appendix C.

7.0 Infiltration Characteristics

Infiltration tests within the site were performed to provide preliminary infiltration rates for the purpose of planning and design of an on-site water disposal system field testing per Ventura County Technical Guidance Manual for Stormwater Quality Control Measures - Update 2011. A truck mounted Simco 2800 Drill Rig equipped with a hollow stem auger was used to excavate the exploratory borings to depths ranging between 5 and 11.5 below existing ground surface. The borings consisted of six-inch diameter test holes. A three-inch diameter perforated PVC casing with solid end cap was installed in the borings and then surrounded with gravel materials to prevent caving.

The infiltration holes were carefully filled with clean water and refilled after two initial readings. Based upon the initial rates of infiltration at each location, test measurements were measured at selected maximum intervals thereafter. Measurements were obtained by using an electronic tape measure with 1/16-inch divisions and timed with a stopwatch.

The field infiltration rate was computed using a reduction factor – R_f based on the field measurements with our calculations given in Appendix D. Based upon the results of our testing, the soils encountered in the planned on-site drainage disposal system area exhibit the following infiltration rates.

Boring/Test No.	Depth (feet)	Soil Classification	Field Infiltration Rate
B-1/TH-1	5.0'	Silty SAND	24.0 in/hr
B-2/TH-2	10.0	Silty SAND	16.4 in/hr
B-4/TH-3	11.0	Silty SAND	4.4 in/hr
B-5/TH-4	11.5	Silty SAND	9.4 in/hr

Groundwater was encountered at a depth of 23 feet below existing ground surface in Borings B-3 and B-6 across the subject site.

Based on the results of our field testing, the subsurface soils encountered in the proposed on-site drainage disposal system shall utilize the design infiltration rates based on the safety factor required by the county standard. All systems must meet the latest city and/or county specifications and the California Regional Water Quality Control Board (CRWQCB) requirements. .

8.0 Conclusions and Recommendations

Based upon our evaluations, the proposed development is acceptable from a geotechnical engineering standpoint. By following the recommendations and guidelines set forth in our report, the structures will be safe from excessive settlements under the anticipated design loadings and conditions. The proposed development shall meet all requirements of the City Building Ordinance and will not impose any adverse effect on existing adjacent structures.

The following recommendations are based upon soil conditions encountered in our field investigation; these near-surface soil conditions could vary across the site. Variations in the soil conditions may not become evident until the commencement of grading operations for the proposed development and revised recommendations from the soils engineer may be necessary based upon the conditions encountered.

It is recommended that site inspections be performed by a representative of this firm during all grading and construction of the development to verify the findings and recommendations documented in this report. Any unusual conditions which may be encountered in the course of the project development may require the need for additional study and revised recommendations.

8.1 Site Grading Recommendations

Any vegetation and/or demolition debris shall be removed and hauled from proposed grading areas prior to the start of grading operations. Existing vegetation shall not be mixed or disced into the soils. Any removed soils may be reutilized as compacted fill once any deleterious material or oversized materials (in excess of eight inches) is removed. Grading operations shall be performed in accordance with the attached *Specifications for Placement of Compacted Fill.*

8.1.1 **Removal and Recompaction Recommendations**

All disturbed soils and/or fill (about one foot below ground surface) shall be removed to competent native material, the exposed surface scarified to a depth of 12 inches, brought to within 2% of optimum moisture content and compacted to a minimum of 90% of the laboratory standard (ASTM: D-1557) prior to placement of any additional compacted fill soils, foundations, slabs-on-grade and pavement. Grading shall extend a minimum of five horizontal feet outside the edges of foundations or equidistant to the depth of fill placed, whichever is greater.

It is possible that isolated areas of undiscovered fill not described in this report are present on site; if found, these areas should be treated as discussed earlier. A diligent search shall also be conducted during grading operations in an effort to uncover any underground structures, irrigation or utility lines. If encountered, these structures and lines shall be either removed or properly abandoned prior to the proposed construction.

Any imported fill material should be preferably soil similar to the upper soils encountered at the subject site. All soils shall be approved by this firm prior to importing at the site and will be subjected to additional laboratory testing to assure concurrence with the recommendations stated in this report.

If placement of slabs-on-grade and pavement is not completed immediately upon completion of grading operations, additional testing and grading of the areas may be necessary prior to continuation of construction operations. Likewise, if adverse weather conditions occur which may damage the subgrade soils, additional assessment by the soils engineer as to the suitability of the supporting soils may be needed.

Care should be taken to provide or maintain adequate lateral support for all adjacent improvements and structures at all times during the grading operations and construction phase. Adequate drainage away from the structures, pavement and slopes should be provided at all times.

8.1.2 **Fill Blanket Recommendations**

Due to the potential for differential settlement of foundations placed on compacted fill and native materials, it is recommended that all foundations including floor slab areas be underlain by a uniform compacted fill blanket at least two feet in thickness. This fill blanket shall extend a minimum of five horizontal feet outside the edges of foundations or equidistant to the depth of fill placed, whichever is greater.

8.2 **Shrinkage and Subsidence**

Results of our in-place density tests reveal that the soil shrinkage will be on the order of 10 to 20% due to excavation and recompaction, based upon the assumption that the fill is compacted to 92% of the maximum dry density per ASTM standards. Subsidence should be 0.2 feet die to earthwork operations. The volume change does not include any allowance for vegetation or organic stripping, removal of subsurface improvements, or topographic approximations. Although these values are only approximate, they represent our best estimate of lost yardage, which will likely occur during grading. If more accurate shrinkage and subsidence factors are needed, it is recommended that field testing the actual equipment and grading techniques should be conducted.

8.3 **Temporary Excavations**

Temporary unsurcharged excavations in the existing site materials may be made at vertical inclinations up to 4 feet in height unless cohesionless soils are encountered. In areas where soils with little or no binder are encountered, where adverse geological conditions are exposed, or where excavations are adjacent to existing structures, shoring or flatter excavations may be required.

The temporary cut slope gradients given above do not preclude local raveling and sloughing. All excavations shall be made in accordance with the requirements of the soils engineer, CAL-OSHA and other public agencies having jurisdiction. Care should be taken to provide or maintain adequate lateral support for all adjacent improvements and structures at all times during the grading operations and construction phase.

8.4 Foundation Design

It is recommended that a stiffened foundation system be utilized for the proposed structure to mitigate for the seismic-induced settlements. The stiffened system shall consist of a mat foundation throughout the new structure. The mat foundation should be at least 12 inches thick and may be designed utilizing an allowable bearing capacity of 2,000 psf placed on a two feet compacted fill blanket. A one-third increase may be used when considering short-term loading and seismic forces.

Foundations for smaller structures (site walls, trash enclosure, etc. may use an allowable bearing value of 2,000 psf for an embedded depth of 24 inches on a two feet thick blanket of compacted fill soils. Any foundations located along property line where lateral overexcavation is not possible may utilize an allowable bearing capacity of 1,500 psf embedded into competent native soils. A representative of this firm shall inspect all foundation excavations prior to pouring concrete.

8.5 Settlement Analysis

Resultant pressure curves for the consolidation tests are shown on Plates B and C. Computations utilizing these curves and the recommended allowable soil bearing capacity reveal that the mat foundations will experience settlements on the order of 1 inch and differential settlements of ½ inch over a 30 feet (horizontal) distance in the building pad area.

8.6 Lateral Resistance

The following values may be utilized in resisting lateral loads imposed on the structure. Requirements of the California Building Code should be adhered to when the coefficient of friction and passive pressures are combined.

Coefficient of Friction - 0.40

Equivalent Passive Fluid Pressure = 250 lbs./cu.ft.

Maximum Passive Pressure = 2,500 lbs./cu.ft.

The passive pressure recommendations are valid only for approved compacted fill soils or competent native materials.

8.7 **Retaining Wall Design Parameters**

Active earth pressures against retaining walls will be equal to the pressures developed by the following fluid densities. These values are for **granular backfill material** placed behind the walls at various ground slopes above the walls.

Surface Slope of Retained Materials (Horizontal to Vertical	Equivalent Fluid Density (lb./cu.ft.)
Level	30
5 to 1	35
4 to 1	38
3 to 1	40
2 to 1	45

Any applicable short-term construction surcharges and seismic forces should be added to the above lateral pressure values. An equivalent fluid pressure of 45 pcf may be utilized for the restrained wall condition with a level grade behind the wall.

The seismic-induced lateral soil pressure for walls greater than 6 feet may be computed using a triangular pressure distribution with the maximum value at the top of the wall. The maximum lateral pressure of (20 pcf) H where H is the height of the retained soils above the wall footing should be used in final design of retaining walls. Sliding resistance values and passive fluid pressure values may be increased by 1/3 during short-term wind and seismic loading conditions.

All walls shall be waterproofed as needed and protected from hydrostatic pressure by a reliable permanent subdrain system. The subsurface drainage system shall consist of a four-inch diameter perforated PVC pipe encased with gravel and wrapped with filter fabric. The granular backfill to be utilized immediately adjacent to retaining walls shall consist of an approved select granular soil with a sand equivalency greater than 30. This backfill zone of free draining material shall consist of a wedge beginning a minimum of one horizontal foot from the base of the wall extending upward at an inclination of no less than ¾ to 1 (horizontal to vertical).

8.8 Slab Design

All concrete slabs shall be a minimum of six inches in thickness in the proposed service areas and four inches in office and hardscape and placed on approved subgrade soils. Additional reinforcement requirements and an increase in thickness of the slabs-on-grade may be necessary based upon proposed loading conditions in the structures and should be evaluated further by the project engineers and/or architect.

A vapor retarder (10-mil minimum thickness) should be utilized in areas which would be sensitive to the infiltration of moisture. This retarder shall meet requirements of ASTM E 96, *Water Vapor Transmission of Materials* and ASTM E 1745, *Standard Specification for Water Vapor Retarders used in Contact with Soil or Granular Fill Under Concrete Slabs.* The vapor retarder shall be installed in accordance with procedures stated in ASTM E 1643, *Standard practice for Installation of Water Vapor Retarders used in Contact with Earth or Granular Fill Under Concrete Slabs.*

The moisture retarder may be placed directly upon compacted subgrade soils conditioned to near optimum moisture levels, although one to two inches of sand beneath the membrane is desirable. The subgrade upon which the retarder is placed shall be smooth and free of rocks, gravel or other protrusions which may damage the retarder. Use of sand above the retarder is under the purview of the structural engineer; if sand is used over the retarder, it should be placed in a dry condition.

8.9 Pavement Section Design

The table below provides a preliminary pavement design based upon an R-Value of 53 for the subgrade soils for the proposed pavement areas. Final pavement design may need to be based on R-Value testing of the subgrade soils near the conclusion of site grading to assure that these soils are consistent with those assumed in this preliminary design.

Type of Traffic	Traffic Index	Asphalt (in.)	Base Material (in.)
Automobile Parking Stalls	4.0	3.0	3.0
Light Vehicle Circulation Areas	6.0	3.5	5.5
Heavy Truck Access	7.0	4.0	8.0

Any concrete slab-on-grade in pavement areas shall be a minimum of six inches in thickness and placed on approved subgrade soils. All pavement areas shall have positive drainage toward an approved outlet from the site. Drain lines behind curbs and/or adjacent to landscape areas should be considered by client and the appropriate design engineers to prevent water from infiltrating beneath pavement. If such infiltration occurs, damage to pavement, curbs and flow lines, especially on sites with expansive soils, may occur during the life of the project.

Any approved base material shall consist of a Class II aggregate or equivalent and should be compacted to a minimum of 95% relative compaction. All pavement materials shall conform to the requirements set forth by the City of Moorpark. The base material; and asphaltic concrete should be tested prior to delivery to the site and during placement to determine conformance with the project specifications. A pavement engineer shall designate the specific asphalt mix design to meet the required project specifications.

8.10 Utility Trench and Excavation Backfill

Trenches from installation of utility lines and other excavations may be backfilled with on-site soils or approved imported soils compacted to a minimum of 90% relative compaction. All utility lines shall be properly bedded with clean sand having a sand equivalency rating of 30 or more. This bedding material shall be thoroughly water jetted around the pipe structure prior to placement of compacted backfill soils.

8.11 Corrosion Design Criteria

Representative samples of the surficial soils, typical of the subgrade soils expected to be encountered within foundation excavations and underground utilities were tested for corrosion potential. The minimum resistivity value obtained for the samples tested is representative of an environment that may be severely corrosive to metals. The soil pH value was considered mildly acidic and may not have a significant effect on soil corrosivity. Consideration should be given to corrosion protection systems for buried metal such as protective coatings, wrappings or the use of PVC where permitted by local building codes.

According to Table 4.3.1 of ACI 318 Building Code and Commentary, these contents revealed negligible sulfate concentrations. Therefore, a Type II cement according to latest CBC specifications may be utilized for building foundations at this time. It is recommended that additional sulfate tests be performed at the completion of site grading to assure that the as graded conditions are consistent with the recommendations stated in this design. Corrosion test results may be found on the attached Table IV.

8.12 Expansive Soil

Granular soils were noted in the upper 12 feet with a very low expansion potential. Expansive clay soils were encountered from 12 to 26 feet deep. If any expansive soils are encountered, special attention should be given to the project design and maintenance.

9.0 Closure

The recommendations and conclusions contained in this report are based upon the soil conditions uncovered in our test excavations. No warranty of the soil condition between our excavations is implied. NorCal Engineering should be notified for possible further recommendations if unexpected to unfavorable conditions are encountered during construction phase. It is the responsibility of the owner to ensure that all information within this report is submitted to the Architect and appropriate Engineers for the project.

A preconstruction conference should be held between the developer, general contractor, grading contractor, city inspector, architect, and geotechnical engineer to clarify any questions relating to the grading operations and subsequent construction. Our representative should be present during the grading operations and construction phase to certify that such recommendations are complied within the field.

This geotechnical investigation has been conducted in a manner consistent with the level of care and skill exercised by members of our profession currently practicing under similar conditions in the Southern California area. No other warranty, expressed or implied is made.

We appreciate this opportunity to be of service to you. If you have any further questions, please do not hesitate to contact the undersigned.

Respectfully submitted,
NORCAL ENGINEERING

Keith D. Tucker
Project Engineer
R.G.E. 841

REGISTERED PROFESSIONAL ENGINEER
KEITH D. TUCKER
No. 841
Exp. 12/31/2022
GEOTECHNICAL
STATE OF CALIFORNIA

Scott D. Spensiero
Project Manager

References

1. American Society of Civil Engineers (ASCE) website, https://asce7hazardtool.online/

2. California Building Code, 2019.

3. California Department of Water Resources, Internet Website, http://www.water.ca.gov/waterdatalibrary/index.cfm.

4. California Division of Mines and Geology, 2000, Seismic Hazard Zone for the Moorpark 7.5-Minute Quadrangle, Ventura County, California - Seismic Hazard Zone Report 041.

5. California Division of Mines and Geology, 2008, Guidelines for Evaluating and Mitigating Seismic Hazards in California: Special Publication 117A.

6. Earthquake Zones of Required Investigation, Seismic Hazard Zones, Moorpark Quadrangle, published by the California Geological Survey.

7. NorCal Engineering Inc. - Geotechnical Engineering Investigation – Proposed Industrial Warehouse - Located at 10951 Los Angeles Avenue, in the City of Moorpark ..... dated July 14, 2020.

8. Thomas W. Dibblee, Jr. - Geologic Map of the Moorpark Quadrangle, Ventura County, California 1992.

9. Ventura County Technical Guidance Manual for Stormwater Quality Control Measures - Update 2011.

SPECIFICATIONS FOR PLACEMENT OF COMPACTED FILL

Excavation

Any existing low-density soils and/or saturated soils shall be removed to competent natural soil under the inspection of the Geotechnical Engineering Firm. After the exposed surface has been cleansed of debris and/or vegetation, it shall be scarified until it is uniform in consistency, brought to the proper moisture content and compacted to a minimum of 90% relative compaction (in accordance with ASTM: D 1557).

In any area where a transition between fill and native soil or between bedrock and soil are encountered, additional excavation beneath foundations and slabs will be necessary in order to provide uniform support and avoid differential settlement of the structure.

Material for Fill

The on-site soils or approved import soils may be utilized for the compacted fill provided they are free of any deleterious materials and shall not contain any rocks, brick, asphaltic concrete, concrete or other hard materials greater than eight inches in maximum dimensions. Any import soil must be approved by the Geotechnical Engineering firm a minimum of 72 hours prior to importation of site.

Placement of Compacted Fill Soils

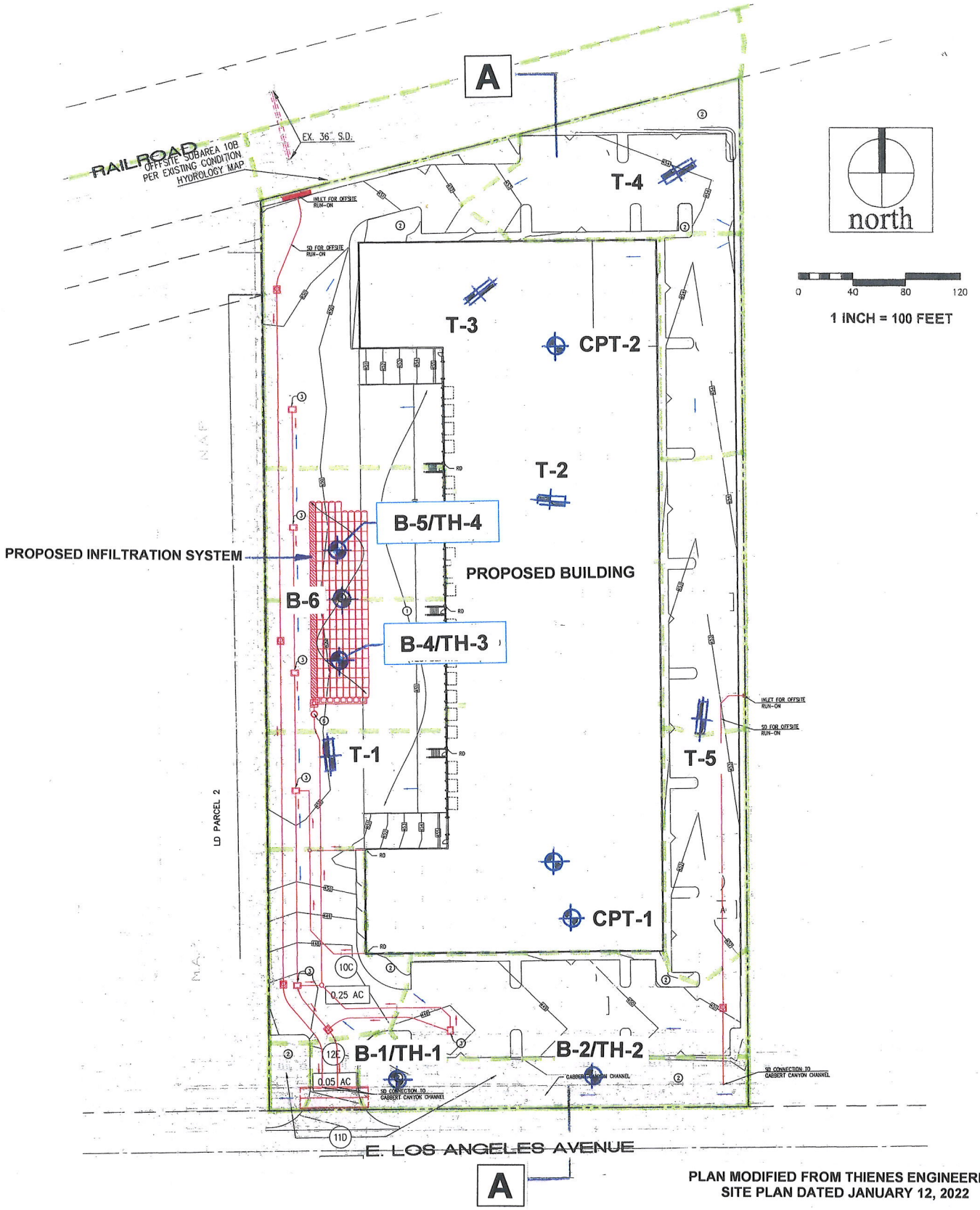
The approved fill soils shall be placed in layers not excess of six inches in thickness. Each lift shall be uniform in thickness and thoroughly blended. The fill soils shall be brought to within 2% of the optimum moisture content, unless otherwise specified by the Soils Engineering firm. Each lift shall be compacted to a minimum of 90% relative compaction (in accordance with ASTM: D 1557) and approved prior to the placement of the next layer of soil. Compaction tests shall be obtained at the discretion of the Geotechnical Engineering firm but to a minimum of one test for every 500 cubic yards placed and/or for every 2 feet of compacted fill placed.

The minimum relative compaction shall be obtained in accordance with accepted methods in the construction industry. The final grade of the structural areas shall be in a dense and smooth condition prior to placement of slabs-on-grade or pavement areas. No fill soils shall be placed, spread or compacted during unfavorable weather conditions. When the grading is interrupted by heavy rains, compaction operations shall not be resumed until approved by the Geotechnical Engineering firm.

Grading Observations

The controlling governmental agencies should be notified prior to commencement of any grading operations. This firm recommends that the grading operations be conducted under the observation of a Geotechnical Engineering firm as deemed necessary. A 24-hour notice must be provided to this firm prior to the time of our initial inspection.

Observation shall include the clearing and grubbing operations to assure that all unsuitable materials have been properly removed; approve the exposed subgrade in areas to receive fill and in areas where excavation has resulted in the desired finished grade and designate areas of overexcavation; and perform field compaction tests to determine relative compaction achieved during fill placement. In addition, all foundation excavations shall be observed by the Geotechnical Engineering firm to confirm that appropriate bearing materials are present at the design grades and recommend any modifications to construct footings.



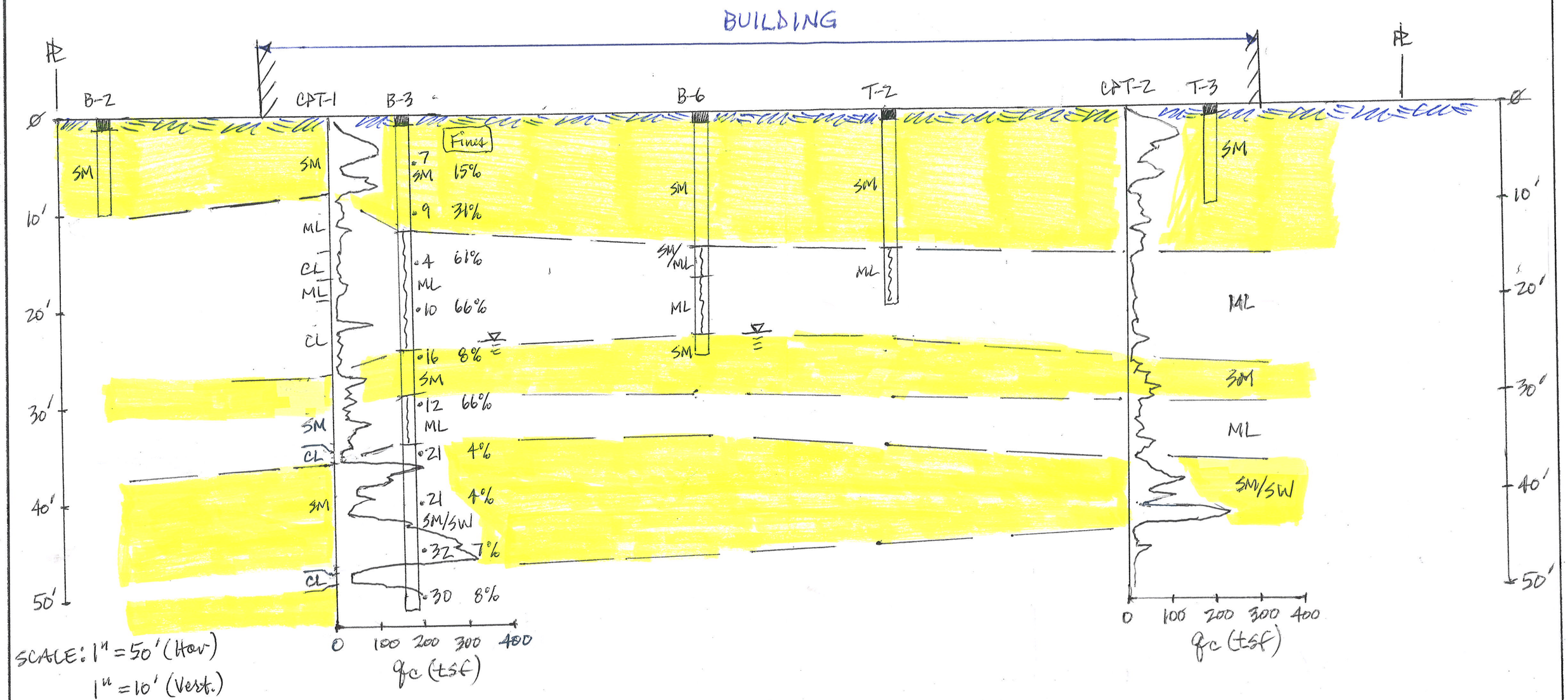
PLAN MODIFIED FROM THIENES ENGINEERING
SITE PLAN DATED JANUARY 12, 2022

NorCal Engineering
SOILS AND GEOTECHNICAL CONSULTANTS

SITE PLAN

PROJECT: **21889-20**

DATE: **APRIL 2022**



NorCal Engineering SOILS AND GEOTECHNICAL CONSULTANTS	
PROJECT 21889-20	DATE APRIL 2022

SECTION A-A

List of Appendices
(in order of appearance)

Appendix A – Log of Excavations

Log of Borings B-1 to B-6
Log of Trenches T-1 to T-5
Log of CPT-1 and CPT-2

Appendix B – Laboratory Tests

Table I – Maximum Dry Density
Table II – Expansion
Table III – Atterberg Limits
Table IV – Corrosion
Plate A – Direct Shear
Plates B and C - Consolidation

Appendix C – Liquefaction Analysis

ASCE/SEI 7-22 Seismic Design Report
Geology and Seismic Hazard Zones Maps
Liquefaction Calculations

Appendix D – Soil Infiltration Data

Field Data Sheets and Calculations

Appendix A
Log of Excavations

MAJOR DIVISION			GRAPHIC SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	SAND AND SANDY SOILS	CLEAN SAND (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SANDS WITH FINE (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND-SILT MIXTURES
				SC	CLAYEY SANDS, SAND-CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

UNIFIED SOIL CLASSIFICATION SYSTEM

KEY:

 Indicates 2.5-inch Inside Diameter. Ring Sample.

 Indicates 2-inch OD Split Spoon Sample (SPT).

 Indicates Shelby Tube Sample.

 Indicates No Recovery.

 Indicates SPT with 140# Hammer 30 in. Drop.

 Indicates Bulk Sample.

 Indicates Small Bag Sample.

 Indicates Non-Standard

 Indicates Core Run.

COMPONENT PROPORTIONS

DESCRIPTIVE TERMS	RANGE OF PROPORTION
Trace	1 - 5%
Few	5 - 10%
Little	10 - 20%
Some	20 - 35%
And	35 - 50%

COMPONENT DEFINITIONS

COMPONENT	SIZE RANGE
Boulders	Larger than 12 in
Cobbles	3 in to 12 in
Gravel	3 in to No 4 (4.5mm)
Coarse gravel	3 in to 3/4 in
Fine gravel	3/4 in to No 4 (4.5mm)
Sand	No. 4 (4.5mm) to No. 200 (0.074mm)
Coarse sand	No. 4 (4.5 mm) to No. 10 (2.0 mm)
Medium sand	No. 10 (2.0 mm) to No. 40 (0.42 mm)
Fine sand	No. 40 (0.42 mm) to No. 200 (0.074 mm)
Silt and Clay	Smaller than No. 200 (0.074 mm)

MOISTURE CONTENT

DRY	Absence of moisture, dusty, dry to the touch.
DAMP	Some perceptible moisture; below optimum
MOIST	No visible water; near optimum moisture content
WET	Visible free water, usually soil is below water table.

RELATIVE DENSITY OR CONSISTENCY VERSUS SPT N -VALUE

COHESIONLESS SOILS		COHESIVE SOILS		
Density	N (blows/ft)	Consistency	N (blows/ft)	Approximate Undrained Shear Strength (psf)
Very Loose	0 to 4	Very Soft	0 to 2	< 250
Loose	4 to 10	Soft	2 to 4	250 - 500
Medium Dense	10 to 30	Medium Stiff	4 to 8	500 - 1000
Dense	30 to 50	Stiff	8 to 15	1000 - 2000
Very Dense	over 50	Very Stiff	15 to 30	2000 - 4000
		Hard	over 30	> 4000

Amir Development Company
21889-20

Log of Boring B-1

Boring Location: 10941 W Los Angeles Ave, Moorpark

Date of Drilling: 6/25/2020 | **Groundwater Depth:** None Encountered

Drilling Method: Simco 2800HS

Hammer Weight: 140 lbs | **Drop:** 30"

Surface Elevation: Not Measured

Depth (feet)	Lith-ology	Material Description	Samples: Type	Samples: Blow Counts	Laboratory: Moisture	Laboratory: Dry Density	Laboratory: Fines Content %
0		FILL Silty (fine to medium grained) SAND Brown, loose, dry					
		NATURAL Silty (fine to medium grained) SAND Brown, medium dense, moist; with occasional gravel					
5		Boring completed at depth of 5'					
10							
15							
20							
25							
30							
35							

GWT not encountered

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\21889-20.log Date: 4/11/2022

NorCal Engineering

Amir Development Company
21889-20

Log of Boring B-2

Boring Location: 10941 W Los Angeles Ave, Moorpark

Date of Drilling: 6/25/2020 | **Groundwater Depth:** None Encountered

Drilling Method: Simco 2800HS

Hammer Weight: 140 lbs | **Drop:** 30"

Surface Elevation: Not Measured

Depth (feet)	Lith-ology	Material Description	Samples: Type	Samples: Blow Counts	Laboratory: Moisture	Laboratory: Dry Density	Laboratory: Fines Content %
0		FILL Silty (fine to medium grained) SAND Brown, loose, dry					
		NATURAL Silty (fine to medium grained) SAND Brown, medium dense, moist; with occasional gravel					
5		GWT not encountered					
10		Boring completed at depth of 10'					
15							
20							
25							
30							
35							

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\21889-20.log Date: 4/11/2022

Amir Development Company
21889-20

Log of Boring B-3

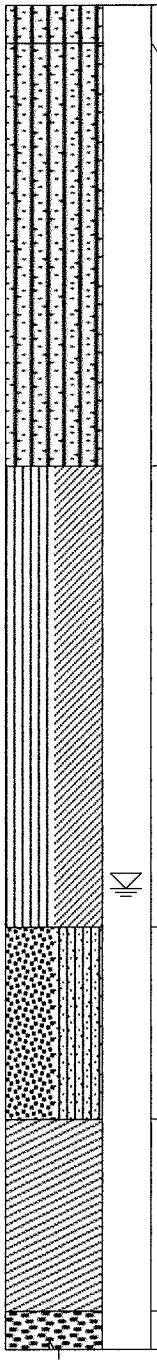
Boring Location: 10941 W Los Angeles Ave, Moorpark

Date of Drilling: 6/25/2020 | **Groundwater Depth:** 23'

Drilling Method: Simco 2800HS

Hammer Weight: 140 lbs | **Drop:** 30"

Surface Elevation: Not Measured



Depth (feet)	Material Description	Samples: Type	Samples: Blow Counts	Laboratory: Moisture	Laboratory: Dry Density	Laboratory: Fines Content %
0	FILL Silty (fine to medium grained) SAND Brown, loose, dry					
	NATURAL Silty (fine to medium grained) SAND Brown, medium dense, moist; with occasional gravel					
5		X	3/3/4	8.2		15
10		X	3/4/5	10.3		31
	Sandy to Clayey SILT Brown, firm, moist to wet					
15		X	2/2/2	16.6		61
20		X	2/5/5	27.1		66
	Silty (fine to medium grained) SAND Light brown, medium dense, wet; slightly silty to silty					
25		X	4/7/9	18.5		8
	Clayey SILT Brown, firm, wet					
30		X	3/5/7	26.9		66
	SAND (fine to medium grained) Light brown, medium dense, wet					
35						

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\21889-20.log Date: 4/11/2022

NorCal Engineering

Amir Development Company
21889-20

Log of Boring B-3

Boring Location: 10941 W Los Angeles Ave, Moorpark

Date of Drilling: 6/25/2020 | **Groundwater Depth:** 23'

Drilling Method: Simco 2800HS

Hammer Weight: 140 lbs | **Drop:** 30"

Surface Elevation: Not Measured

Depth (feet)	Lith-ology	Material Description	Samples: Type	Samples: Blow Counts	Laboratory: Moisture	Laboratory: Dry Density	Laboratory: Fines Content %
35		SAND (fine to medium grained) Light brown, medium dense, wet		8/9/12	19.5		4
40				8/9/12	19.5		4
45				9/13/19	17.8.		7
50				10/12/18	16.4		8
		Boring completed at depth of 51.5'					
55							
60							
65							
70							

SuperLog CiviliTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\21889-20.log Date: 4/11/2022

NorCal Engineering

Amir Development Company
21889-20

Log of Trench T-1

Boring Location: 10941 W Los Angeles Ave, Moorpark

Date of Drilling: 6/25/2020 | Groundwater Depth: None Encountered

Drilling Method: Backhoe

Hammer Weight: | Drop:

Surface Elevation: Not Measured

Depth (feet)	Lith-ology	Material Description	Samples: Type	Samples: Blow Counts	Laboratory: Moisture	Laboratory: Dry Density	Laboratory: Fines Content %
0		FILL Silty (fine to medium grained) SAND Brown, loose, dry					
		NATURAL Silty (fine to medium grained) SAND Brown, medium dense, moist; with occasional gravel			5.2	102.8	
5					4.2	104.7	
10		Trench completed at depth of 10'					
15							
20							
25							
30							
35							

GWT not encountered

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\21889-20.log Date: 4/11/2022

NorCal Engineering

Amir Development Company
21889-20

Log of Trench T-2

Boring Location: 10941 W Los Angeles Ave, Moorpark

Date of Drilling: 6/25/2020 | Groundwater Depth: None Encountered

Drilling Method: Backhoe

Hammer Weight: | Drop:

Surface Elevation: Not Measured

Depth (feet)	Lith-ology	Material Description	Samples: Type	Samples: Blow Counts	Laboratory: Moisture	Laboratory: Dry Density	Laboratory: Fines Content %
0		FILL Silty (fine to medium grained) SAND Brown, loose, dry	■		7.5	100.9	
		NATURAL Silty (fine to medium grained) SAND Brown, medium dense, moist; with occasional gravel					
5			■		7.8	106.9	
10			■		8.5	107.2	
15		Sandy to Clayey SILT Brown, firm, moist	■		11.7	110.1	
20		Trench completed at depth of 20'	■		18.8	105.6	
25							
30							
35							

GWT not encountered

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\21889-20.log Date: 4/11/2022

NorCal Engineering

Amir Development Company
21889-20

Log of Trench T-3

Boring Location: 10941 W Los Angeles Ave, Moorpark

Date of Drilling: 6/25/2020 | **Groundwater Depth:** None Encountered

Drilling Method: Backhoe

Hammer Weight: | **Drop:**

Surface Elevation: Not Measured

Depth (feet)	Lith-ology	Material Description	Samples: Type	Samples: Blow Counts	Laboratory: Moisture	Laboratory: Dry Density	Laboratory: Fines Content %
0		FILL Silty (fine to medium grained) SAND Brown, loose, dry					
		NATURAL Silty (fine to coarse grained) SAND Brown, medium dense, moist; with occasional gravel	■		11.4	105.2	
5			■		5.9	103.2	
10		Trench completed at depth of 10'					
15							
20							
25							
30							
35							

GWT not encountered

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\21889-20.log Date: 4/11/2022

NorCal Engineering

Amir Development Company
21889-20

Log of Trench T-4

Boring Location: 10941 W Los Angeles Ave, Moorpark

Date of Drilling: 6/25/2020 | **Groundwater Depth:** None Encountered

Drilling Method: Backhoe

Hammer Weight: | **Drop:**

Surface Elevation: Not Measured

Depth (feet)	Lith-ology	Material Description	Samples: Type	Samples: Blow Counts	Laboratory: Moisture	Laboratory: Dry Density	Laboratory: Fines Content %
0		FILL Silty (fine to medium grained) SAND Brown, loose, dry	■		3.9	107.7	
		NATURAL Silty (fine to coarse grained) SAND Brown, medium dense, moist; with occasional gravel	■		6.0	105.1	
5		GWT not encountered					
10		Trench completed at depth of 10'					
15							
20							
25							
30							
35							

SuperLog CiviliTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\21889-20.log Date: 4/11/2022

NorCal Engineering

Amir Development Company
21889-20

Log of Trench T-5

Boring Location: 10941 W Los Angeles Ave, Moorpark

Date of Drilling: 6/25/2020 | **Groundwater Depth:** None Encountered

Drilling Method: Backhoe

Hammer Weight: | **Drop:**

Surface Elevation: Not Measured

Depth (feet)	Lithology	Material Description	Samples: Type	Samples: Blow Counts	Laboratory: Moisture	Laboratory: Dry Density	Laboratory: Fines Content %
0		FILL Silty (fine to medium grained) SAND Brown, loose, dry					
		NATURAL Silty (fine to coarse grained) SAND Brown, medium dense, moist; with occasional gravel and cobble	■		4.3	108.1	
5			■		5.2	106.0	
10		Trench completed at depth of 10'					
15							
20							
25							
30							
35							

GWT not encountered

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\21889-20.log Date: 4/11/2022

NorCal Engineering

Amir Development Company
21889-20

Log of Boring B-4

Boring Location: 10941 W Los Angeles Ave, Moorpark

Date of Drilling: 3/24/2022 | Groundwater Depth: None Encountered

Drilling Method: Simco 2800HS

Hammer Weight: 140 lbs | Drop: 30"

Surface Elevation: Not Measured

Depth (feet)	Lith-ology	Material Description	Samples: Type	Samples: Blow Counts	Laboratory: Moisture	Laboratory: Dry Density	Laboratory: Fines Content %
0		FILL Silty (fine to medium grained) SAND Brown, loose, moist					
		NATURAL Silty (fine to medium grained) SAND Brown, medium dense, moist; with occasional gravel					
5			☒	3/3/4	8.2		15
10			☒	3/4/5	10.3		31
		Boring completed at depth of 11'					
15							
20							
25							
30							
35							

GWT not encountered

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\21889-20.log Date: 4/11/2022

NorCal Engineering

Amir Development Company
21889-20

Log of Boring B-5

Boring Location: 10941 W Los Angeles Ave, Moorpark

Date of Drilling: 3/24/2022 | Groundwater Depth: None Encountered

Drilling Method: Simco 2800HS

Hammer Weight: 140 lbs | Drop: 30"

Surface Elevation: Not Measured

Depth (feet)	Lith-ology	Material Description	Samples: Type	Samples: Blow Counts	Laboratory: Moisture	Laboratory: Dry Density	Laboratory: Fines Content %
0		FILL Silty (fine to medium grained) SAND Brown, loose, moist					
		NATURAL Silty (fine to medium grained) SAND Brown, medium dense, moist; with occasional gravel					
5			☒	3/3/4	8.2		15
10			☒	3/4/5	10.3		31
		Boring completed at depth of 11.5'					
15							
20							
25							
30							
35							

GWT not encountered

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\21889-20.log Date: 4/11/2022

NorCal Engineering

Amir Development Company
21889-20

Log of Boring B-6

Boring Location: 10941 W Los Angeles Ave, Moorpark

Date of Drilling: 3/24/2022 | **Groundwater Depth:** 23'

Drilling Method: Simco 2800HS

Hammer Weight: 140 lbs | **Drop:** 30"

Surface Elevation: Not Measured

Depth (feet)	Lith-ology	Material Description	Samples: Type	Samples: Blow Counts	Laboratory: Moisture	Laboratory: Dry Density	Laboratory: Fines Content %
0		FILL Silty (fine to medium grained) SAND Brown, loose, moist					
		NATURAL Silty (fine to medium grained) SAND Brown, medium dense, moist; with occasional gravel					
5			X	3/3/4	8.2		15
10			X	3/4/5	10.3		31
15		Sandy SILT Brown, firm, moist	X	2/2/2	16.6		61
		Clayey SILT Brown, firm, moist to wet Groundwater @ 23' bgs					
20			X	2/5/5	27.1		66
		Silty (fine to coarse grained) SAND Light brown, medium dense, wet; slightly silty					
25		Boring completed at depth of 25'	X	4/7/9	18.5		8
30							
35							

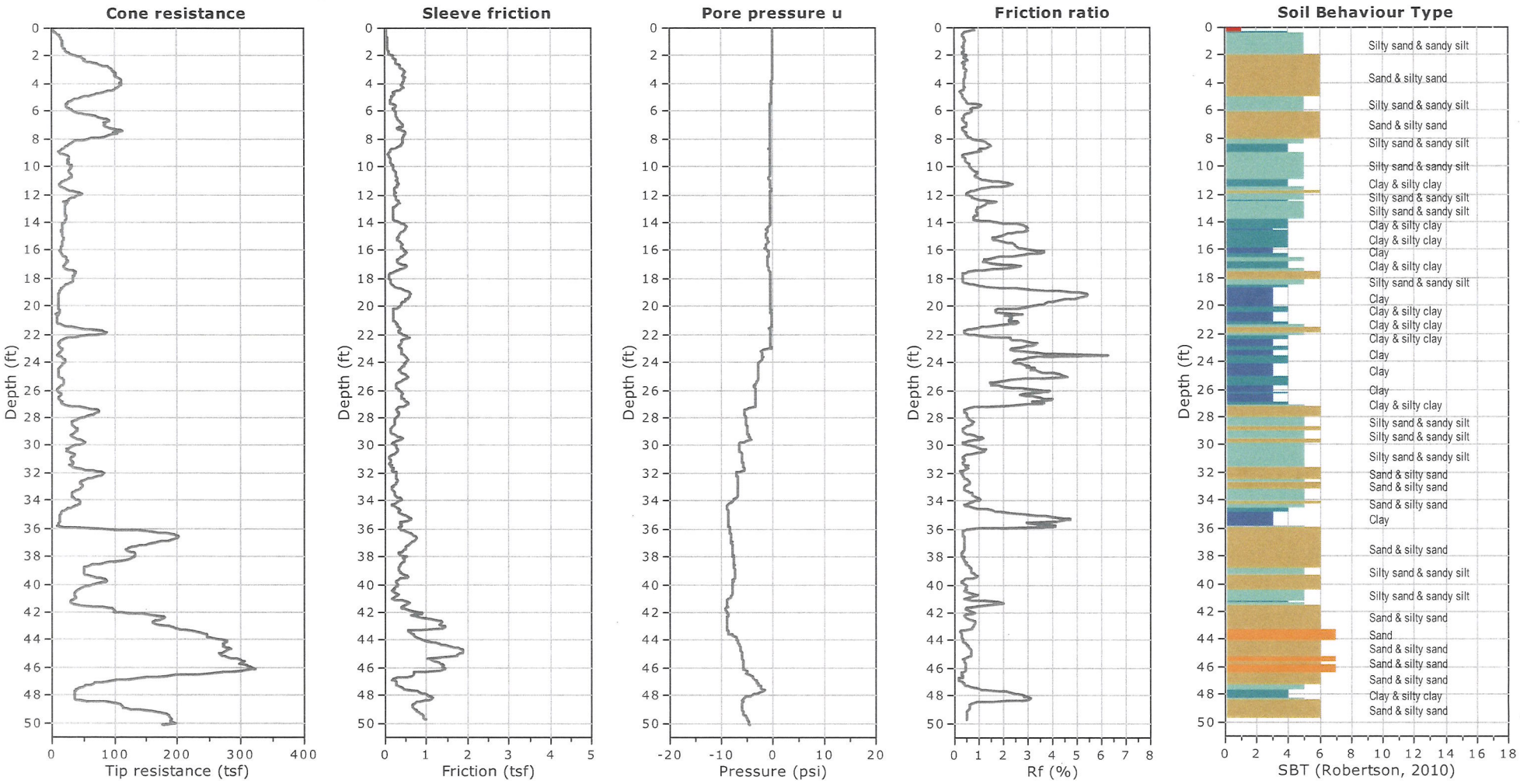
SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\21889-20.log Date: 4/11/2022

NorCal Engineering

Kehoe Testing and Engineering
714-901-7270
steve@kehoetesting.com
www.kehoetesting.com

Project: **Amir Development Company**
Location: **10941 W. Los Angeles Avenue, Moorpark CA**

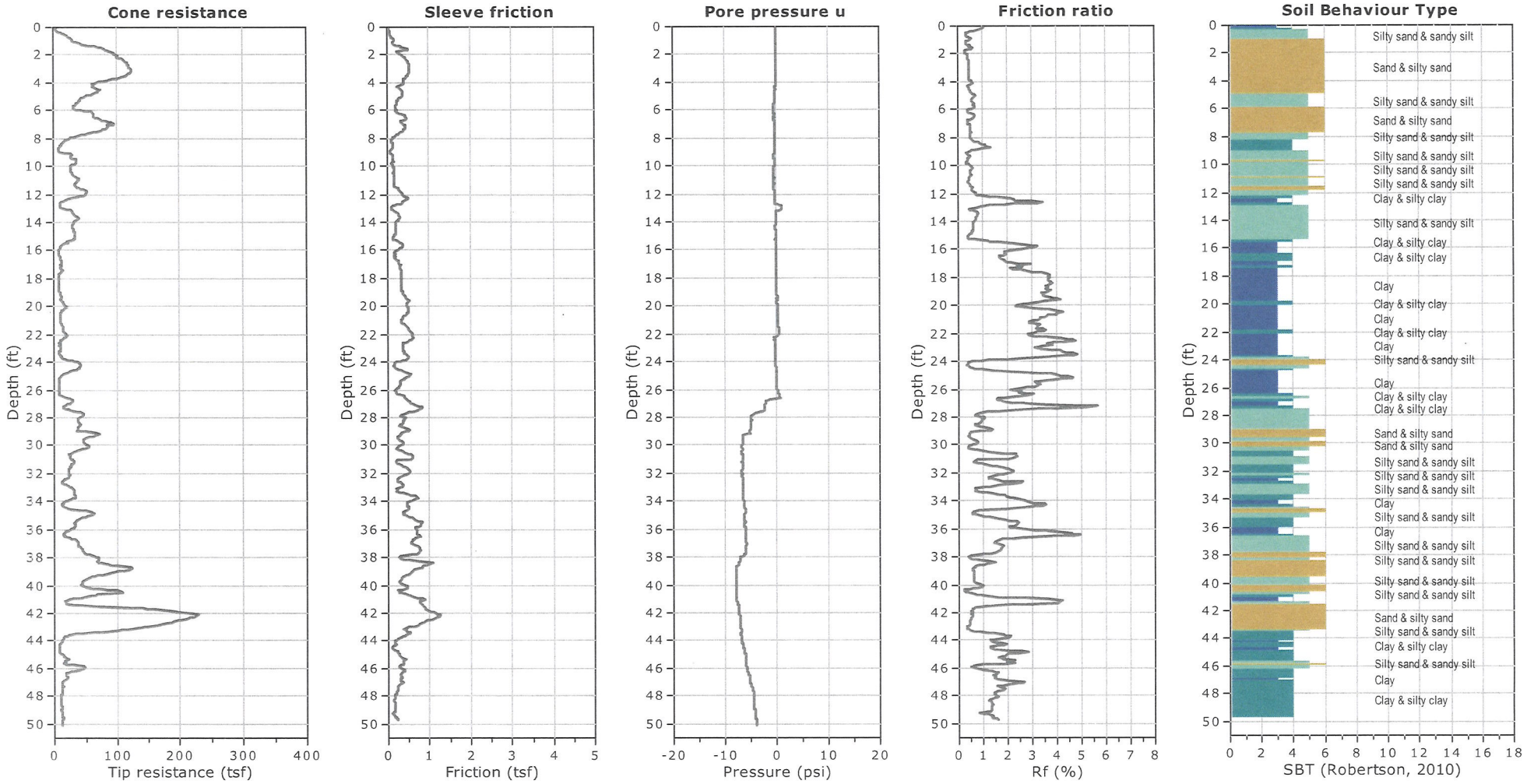
CPT-1
Total depth: 50.13 ft, Date: 3/25/2022



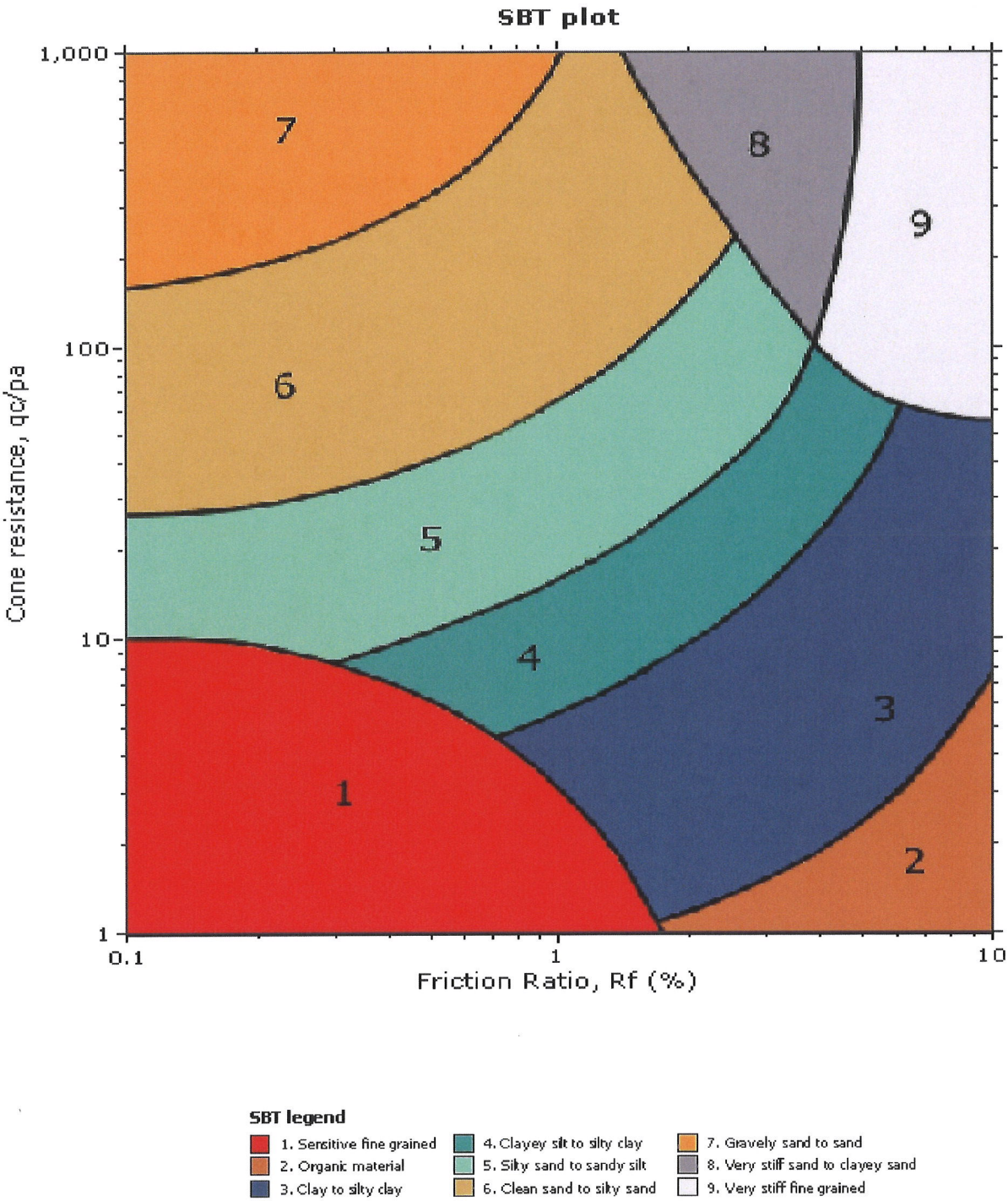
Kehoe Testing and Engineering
714-901-7270
steve@kehoetesting.com
www.kehoetesting.com

Project: **Amir Development Company**
Location: **10941 W. Los Angeles Avenue, Moorpark CA**

CPT-2
Total depth: 50.13 ft, Date: 3/25/2022



Kehoe Testing and Engineering
714-901-7270
rich@kehoetesting.com
www.kehoetesting.com



Depth (ft)	Tip Stress (tsf)	Sleeve Stre (tsf)	Pore Pressı (psi)	Ratio (%)
0	0.37	0.0168	-0.094	4.581
0.081	2.29	0.0183	-0.094	0.799
0.155	2.84	0.024	-0.094	0.845
0.2	3.39	0.024	0	0.708
0.276	4.58	0.024	0	0.524
0.329	5.68	0.0258	-0.016	0.454
0.411	8.33	0.0328	0	0.394
0.468	10.34	0.0363	-0.016	0.351
0.526	11.9	0.0415	0	0.349
0.597	13.55	0.0481	0	0.355
0.665	14.37	0.0549	0	0.382
0.742	15.01	0.0601	0	0.4
0.796	15.56	0.0642	0	0.413
0.862	16.11	0.0726	0	0.451
0.929	16.38	0.0725	0	0.442
0.989	16.29	0.0688	0	0.422
1.051	16.48	0.066	0	0.4
1.136	16.93	0.066	0	0.39
1.197	17.12	0.066	0	0.385
1.258	17.94	0.066	0	0.368
1.324	18.67	0.0676	0	0.362
1.386	19.59	0.0704	0	0.359
1.45	19.95	0.0728	0	0.365
1.512	20.6	0.0747	0	0.363
1.577	21.6	0.0793	0	0.367
1.644	22.7	0.088	0	0.387
1.729	25.36	0.0934	0	0.369
1.778	27.09	0.0977	0	0.36
1.838	30.85	0.1088	0	0.353
1.913	35.61	0.1524	0	0.428
1.978	39.27	0.1932	0	0.492
2.042	42.38	0.2076	0	0.49
2.101	46.22	0.19	0	0.411
2.173	48.33	0.1921	0	0.398
2.245	52.45	0.2623	0	0.5
2.304	50.8	0.2795	0	0.55
2.369	53.91	0.2699	0	0.501
2.43	58.76	0.2699	0	0.459
2.496	62.34	0.2525	0	0.405
2.564	71.85	0.2542	0	0.354
2.63	76.8	0.347	0	0.452
2.699	83.94	0.3479	0	0.414
2.757	90.53	0.3479	0	0.384
2.827	92.45	0.3684	0	0.399

2.893	96.84	0.3967	-0.038	0.41
2.984	97.3	0.4366	0	0.449
3.025	96.57	0.4562	-0.062	0.472
3.087	100.14	0.4811	0	0.48
3.16	99.04	0.4793	-0.066	0.484
3.217	101.97	0.4469	-0.068	0.438
3.285	102.43	0.4455	-0.069	0.435
3.348	101.42	0.4525	-0.096	0.446
3.424	101.33	0.4421	-0.101	0.436
3.484	104.35	0.4633	-0.101	0.444
3.547	105.81	0.4812	-0.101	0.455
3.611	108.56	0.4758	-0.113	0.438
3.699	110.57	0.4598	-0.115	0.416
3.745	110.76	0.4541	-0.117	0.41
3.807	110.48	0.4465	-0.136	0.404
3.879	110.85	0.4416	-0.136	0.398
3.951	109.84	0.4348	-0.136	0.396
4.007	110.94	0.4232	-0.094	0.382
4.075	111.31	0.408	-0.165	0.367
4.139	110.02	0.4041	-0.159	0.367
4.209	107.64	0.4397	-0.159	0.409
4.274	105.63	0.447	-0.174	0.423
4.335	101.97	0.4117	-0.174	0.404
4.4	99.68	0.3959	-0.178	0.397
4.497	95.56	0.357	-0.178	0.374
4.533	90.62	0.2909	-0.198	0.321
4.597	82.47	0.1991	-0.198	0.241
4.666	77.9	0.2047	-0.198	0.263
4.727	73.5	0.2209	-0.255	0.301
4.791	67.92	0.2281	-0.282	0.336
4.861	60.96	0.1921	-0.309	0.315
4.925	53.18	0.1787	-0.328	0.336
4.987	47.69	0.1694	-0.328	0.355
5.054	43.2	0.1648	-0.348	0.381
5.13	36.06	0.1502	-0.348	0.417
5.19	33.5	0.1474	-0.348	0.44
5.259	30.11	0.1459	-0.374	0.485
5.332	27.92	0.1395	-0.374	0.5
5.404	26.09	0.1297	-0.374	0.497
5.454	24.81	0.1323	-0.374	0.533
5.524	23.71	0.2111	-0.468	0.89
5.599	23.71	0.2697	-0.468	1.138
5.648	23.71	0.2525	-0.468	1.065
5.729	25.45	0.2296	-0.468	0.902
5.779	27.64	0.2079	-0.468	0.752
5.845	30.85	0.2106	-0.468	0.683
5.914	31.12	0.223	-0.484	0.716

5.98	34.42	0.2411	-0.484	0.701
6.041	36.89	0.2574	-0.489	0.698
6.127	42.38	0.2596	-0.489	0.613
6.182	47.41	0.2534	-0.489	0.534
6.257	55.01	0.257	-0.478	0.467
6.307	60.14	0.2583	-0.468	0.429
6.404	70.21	0.2738	-0.468	0.39
6.447	75.24	0.2895	-0.468	0.385
6.521	83.66	0.3066	-0.468	0.367
6.579	87.32	0.3099	-0.468	0.355
6.649	91.35	0.3219	-0.468	0.352
6.717	90.98	0.347	-0.468	0.381
6.759	89.34	0.364	-0.468	0.407
6.851	84.49	0.3938	-0.468	0.466
6.89	83.57	0.4101	-0.468	0.491
6.975	84.67	0.4296	-0.468	0.507
7.024	82.84	0.4259	-0.468	0.514
7.117	84.85	0.4306	-0.468	0.507
7.166	87.69	0.3763	-0.468	0.429
7.233	94.37	0.3105	-0.468	0.329
7.3	103.89	0.344	-0.468	0.331
7.378	109.38	0.3945	-0.468	0.361
7.449	113.04	0.4371	-0.468	0.387
7.488	113.23	0.4571	-0.468	0.404
7.56	97.48	0.4811	-0.468	0.494
7.616	104.72	0.4917	-0.468	0.47
7.679	99.41	0.4852	-0.468	0.488
7.749	92.63	0.4693	-0.468	0.507
7.824	84.67	0.461	-0.468	0.544
7.885	76.98	0.4428	-0.468	0.575
7.97	63.52	0.4192	-0.562	0.66
8.011	57.21	0.4222	-0.468	0.738
8.084	46.41	0.429	-0.562	0.924
8.155	39.45	0.4229	-0.468	1.072
8.242	34.87	0.4393	-0.468	1.26
8.282	32.95	0.434	-0.468	1.317
8.334	31.3	0.423	-0.468	1.351
8.425	27.55	0.4015	-0.468	1.457
8.48	25.72	0.3892	-0.468	1.513
8.537	23.8	0.3626	-0.562	1.524
8.605	21.69	0.3066	-0.562	1.413
8.668	18.86	0.2424	-0.749	1.286
8.732	16.57	0.1705	-0.655	1.029
8.804	14.46	0.1447	-0.655	1.001
8.866	12.63	0.1371	-0.655	1.085
8.936	11.62	0.1208	-0.655	1.039
9.002	12.45	0.0981	-0.655	0.788

9.083	15.84	0.0789	-0.468	0.498
9.13	18.58	0.0794	-0.468	0.427
9.198	24.9	0.0885	-0.468	0.355
9.259	27.92	0.0976	-0.468	0.35
9.343	28.83	0.1095	-0.468	0.38
9.403	28.1	0.1198	-0.468	0.426
9.456	26.82	0.1218	-0.468	0.454
9.537	26.18	0.1153	-0.468	0.44
9.583	26.09	0.1179	-0.562	0.452
9.649	26.45	0.1252	-0.562	0.473
9.712	27.74	0.1349	-0.562	0.486
9.792	25.54	0.1629	-0.562	0.638
9.844	30.21	0.1786	-0.562	0.591
9.915	31.67	0.1866	-0.562	0.589
9.982	31.76	0.1944	-0.562	0.612
10.072	31.03	0.2019	-0.562	0.651
10.116	30.3	0.2024	-0.562	0.668
10.175	29.38	0.2125	-0.562	0.723
10.245	28.74	0.2309	-0.562	0.804
10.333	28.1	0.2517	-0.562	0.896
10.383	28.28	0.2693	-0.562	0.952
10.465	29.02	0.277	-0.562	0.955
10.511	29.66	0.2775	-0.562	0.936
10.572	31.76	0.2739	-0.655	0.862
10.643	32.59	0.2771	-0.655	0.85
10.731	31.85	0.2865	-0.749	0.899
10.765	30.66	0.2857	-0.749	0.932
10.858	26.82	0.2857	-0.749	1.065
10.923	24.07	0.2779	-0.655	1.154
10.961	22.43	0.2804	-0.655	1.25
11.05	18.49	0.3001	-0.655	1.623
11.095	17.12	0.3105	-0.655	1.814
11.183	14.55	0.3217	-0.655	2.21
11.222	13.64	0.3218	-0.655	2.359
11.287	12.91	0.308	-0.562	2.386
11.359	13.27	0.2971	-0.562	2.239
11.426	15.29	0.2889	-0.562	1.89
11.485	17.67	0.2691	-0.468	1.523
11.566	21.69	0.2414	-0.281	1.113
11.63	24.81	0.2359	-0.187	0.951
11.7	30.48	0.2359	-0.281	0.774
11.764	35.15	0.2384	-0.468	0.678
11.855	43.75	0.2496	-0.562	0.57
11.893	45.58	0.2446	-0.562	0.537
11.943	48.15	0.2399	-0.562	0.498
12.022	47.69	0.2399	-0.562	0.503
12.083	42.84	0.2399	-0.562	0.56

12.167	37.99	0.2675	-0.562	0.704
12.206	35.61	0.2603	-0.562	0.731
12.283	31.12	0.2503	-0.562	0.804
12.347	28.65	0.2619	-0.562	0.914
12.42	27.46	0.2849	-0.655	1.038
12.477	26.91	0.3323	-0.655	1.235
12.534	19.77	0.3439	-0.624	1.739
12.6	24.81	0.3487	-0.624	1.406
12.667	24.53	0.3334	-0.624	1.359
12.746	23.34	0.3043	-0.562	1.304
12.833	21.6	0.2549	-0.655	1.18
12.88	21.42	0.224	-0.655	1.046
12.927	21.24	0.2042	-0.655	0.962
13.011	21.33	0.1985	-0.655	0.931
13.071	21.33	0.1936	-0.655	0.908
13.144	21.51	0.1883	-0.655	0.876
13.192	21.51	0.1939	-0.655	0.901
13.263	21.51	0.1965	-0.655	0.913
13.324	21.51	0.2046	-0.655	0.951
13.413	21.51	0.2033	-0.655	0.945
13.46	21.05	0.197	-0.655	0.936
13.546	22.52	0.1868	-0.655	0.83
13.594	23.25	0.1885	-0.655	0.811
13.655	24.35	0.1916	-0.655	0.787
13.727	24.44	0.1852	-0.655	0.758
13.787	23.89	0.1905	-0.655	0.798
13.865	22.15	0.2525	-0.655	1.14
13.927	21.51	0.3101	-0.655	1.442
13.993	21.05	0.3567	-0.655	1.694
14.059	19.59	0.4025	-0.655	2.055
14.129	17.85	0.453	-0.655	2.538
14.173	17.39	0.49	-0.655	2.817
14.246	17.21	0.5111	-0.749	2.97
14.351	16.84	0.5022	-0.936	2.982
14.397	16.84	0.4993	-0.936	2.964
14.443	16.84	0.493	-0.936	2.927
14.519	16.57	0.4841	-1.216	2.922
14.578	16.02	0.4762	-1.17	2.973
14.66	15.84	0.4354	-1.17	2.75
14.721	16.2	0.4097	-1.17	2.529
14.788	16.38	0.3742	-1.31	2.284
14.83	16.57	0.3572	-1.216	2.156
14.935	17.48	0.3325	-1.216	1.902
14.977	17.94	0.3244	-1.216	1.808
15.033	18.49	0.313	-1.216	1.693
15.11	18.86	0.2978	-1.123	1.579
15.161	18.95	0.2965	-1.123	1.565

15.23	18.76	0.306	-1.03	1.631
15.291	18.4	0.3214	-0.936	1.747
15.378	17.76	0.359	-0.842	2.021
15.427	17.39	0.3842	-0.936	2.209
15.498	16.93	0.4066	-1.123	2.401
15.552	16.75	0.4113	-1.216	2.455
15.646	16.2	0.4071	-1.216	2.512
15.688	16.2	0.4058	-1.216	2.505
15.752	15.74	0.4058	-1.31	2.578
15.822	15.38	0.4058	-1.591	2.639
15.885	14.92	0.4147	-1.591	2.78
15.962	14.28	0.4449	-1.123	3.116
16.017	13.82	0.4728	-0.936	3.421
16.094	13.73	0.5035	-0.842	3.667
16.162	14	0.5125	-0.842	3.659
16.212	14.55	0.4983	-0.842	3.424
16.296	15.74	0.4774	-0.842	3.032
16.35	16.75	0.4581	-0.842	2.735
16.409	18.22	0.4312	-0.842	2.367
16.492	20.87	0.3879	-0.936	1.859
16.543	22.52	0.3601	-1.123	1.599
16.624	23.8	0.3204	-1.123	1.346
16.672	24.53	0.2984	-1.123	1.217
16.736	24.81	0.2971	-1.123	1.198
16.8	24.62	0.2909	-1.03	1.181
16.882	23.89	0.3115	-1.03	1.304
16.936	23.07	0.3365	-0.936	1.459
17.027	21.6	0.4289	-0.936	1.986
17.072	21.14	0.4854	-0.936	2.296
17.164	19.95	0.5416	-0.936	2.714
17.208	19.86	0.4778	-0.842	2.405
17.28	20.78	0.3826	-0.749	1.841
17.329	22.24	0.3593	-0.749	1.615
17.398	27.92	0.3318	-0.749	1.188
17.456	33.23	0.2885	-0.749	0.868
17.532	39.18	0.2233	-0.655	0.57
17.587	36.61	0.1712	-0.655	0.468
17.656	37.44	0.1311	-0.655	0.35
17.73	36.8	0.1137	-0.562	0.309
17.799	35.33	0.108	-0.562	0.306
17.857	34.69	0.108	-0.562	0.311
17.927	34.69	0.108	-0.562	0.311
17.995	34.69	0.1093	-0.562	0.315
18.048	34.97	0.1118	-0.562	0.32
18.133	35.24	0.1159	-0.562	0.329
18.181	34.87	0.1165	-0.562	0.334
18.259	32.49	0.1237	-0.562	0.381

18.32	29.66	0.1383	-0.562	0.466
18.405	26.54	0.1672	-0.562	0.63
18.448	24.16	0.1784	-0.562	0.738
18.519	20.87	0.2016	-0.562	0.966
18.581	18.86	0.2427	-0.562	1.287
18.658	16.38	0.3145	-0.562	1.92
18.716	14.92	0.3748	-0.562	2.512
18.769	13.91	0.4271	-0.562	3.07
18.847	13	0.496	-0.562	3.816
18.9	12.63	0.5354	-0.562	4.239
18.986	12.27	0.5877	-0.562	4.791
19.029	11.9	0.6053	-0.562	5.087
19.119	11.35	0.6118	-0.562	5.39
19.188	11.17	0.6074	-0.562	5.439
19.238	11.17	0.6019	-0.468	5.39
19.294	11.17	0.5944	-0.468	5.323
19.374	11.17	0.5709	-0.468	5.113
19.433	11.17	0.5479	-0.468	4.906
19.515	11.26	0.5075	-0.468	4.508
19.561	11.26	0.483	-0.468	4.29
19.642	11.08	0.4443	-0.468	4.011
19.699	10.98	0.4181	-0.468	3.806
19.761	10.98	0.4078	-0.468	3.713
19.832	10.98	0.3996	-0.468	3.638
19.888	11.26	0.3856	-0.468	3.425
19.962	11.62	0.3647	-0.468	3.138
20.054	11.72	0.3395	-0.468	2.898
20.1	11.62	0.3415	-0.468	2.938
20.149	11.62	0.2973	-0.468	2.557
20.212	11.53	0.2023	-0.468	1.754
20.277	12.08	0.2001	-0.374	1.656
20.368	12.36	0.2089	-0.468	1.691
20.414	12.36	0.2107	-0.468	1.705
20.48	11.35	0.2109	-0.374	1.858
20.549	7.32	0.205	-0.374	2.8
20.612	9.89	0.2011	-0.374	2.035
20.679	9.43	0.2058	-0.374	2.183
20.736	8.7	0.2017	-0.281	2.32
20.811	8.6	0.1991	-0.281	2.314
20.879	8.42	0.193	-0.281	2.292
20.947	8.51	0.1904	-0.281	2.237
21.007	8.79	0.1961	-0.281	2.231
21.081	9.24	0.2341	-0.281	2.533
21.16	9.61	0.2505	-0.187	2.607
21.196	10.16	0.2544	-0.187	2.503
21.275	12.63	0.284	-0.187	2.248
21.343	17.21	0.3056	-0.187	1.776

21.394	22.98	0.3078	-0.187	1.34
21.457	31.03	0.3425	-0.374	1.104
21.531	40.18	0.3719	-0.749	0.926
21.593	52.72	0.3532	-0.655	0.67
21.659	63.8	0.3542	-0.577	0.555
21.749	81.92	0.3229	-0.577	0.394
21.795	85.58	0.3273	-0.577	0.382
21.853	87.14	0.3445	-0.562	0.395
21.924	84.94	0.3943	-0.562	0.464
21.991	70.21	0.4229	-0.562	0.602
22.06	57.85	0.4759	-0.562	0.823
22.133	44.94	0.5311	-0.562	1.182
22.188	36.8	0.5672	-0.562	1.542
22.249	25.72	0.5902	-0.562	2.294
22.329	20.32	0.4651	-0.562	2.289
22.393	16.75	0.3927	-0.562	2.345
22.461	15.01	0.4108	-0.562	2.736
22.508	13.82	0.4102	-0.562	2.968
22.588	12.36	0.4004	-0.562	3.24
22.642	11.62	0.3946	-0.499	3.394
22.71	10.98	0.3643	-0.499	3.317
22.785	10.89	0.3417	-0.499	3.137
22.849	11.26	0.333	-0.468	2.958
22.91	12.36	0.3437	-0.374	2.781
23.003	15.38	0.3789	-0.374	2.464
23.037	16.75	0.3895	-0.842	2.325
23.116	17.48	0.3939	-1.965	2.253
23.191	15.74	0.3904	-2.246	2.48
23.233	14.83	0.3915	-2.246	2.64
23.32	11.81	0.3964	-2.152	3.357
23.369	10.8	0.4048	-2.059	3.748
23.427	10.44	0.4332	-2.09	4.151
23.493	7.6	0.4737	-2.09	6.235
23.557	13.55	0.4917	-2.09	3.63
23.63	15.29	0.5068	-1.965	3.315
23.699	17.67	0.5276	-2.059	2.987
23.76	19.59	0.5451	-2.059	2.783
23.821	21.33	0.5466	-2.059	2.563
23.901	21.42	0.5211	-2.433	2.433
23.981	20.69	0.4916	-2.714	2.377
24.034	19.31	0.4804	-2.901	2.487
24.092	17.67	0.4692	-2.995	2.656
24.15	16.48	0.4661	-2.995	2.829
24.245	15.01	0.4574	-2.995	3.047
24.285	14.28	0.4317	-2.995	3.023
24.348	13.55	0.3974	-2.995	2.934
24.423	11.99	0.393	-2.995	3.278

24.482	11.08	0.3639	-2.995	3.286
24.565	10.8	0.3331	-2.995	3.084
24.615	10.71	0.3559	-2.995	3.324
24.686	10.89	0.3755	-2.995	3.447
24.738	10.71	0.3875	-2.995	3.618
24.803	10.07	0.4096	-2.964	4.067
24.891	11.17	0.4845	-2.964	4.339
24.936	11.72	0.5164	-2.964	4.407
25.021	11.72	0.5405	-2.901	4.613
25.071	12.08	0.5434	-2.901	4.497
25.146	14.74	0.5136	-2.901	3.485
25.202	16.57	0.4776	-2.995	2.883
25.266	19.22	0.4351	-2.995	2.263
25.336	20.14	0.3799	-3.088	1.886
25.423	20.14	0.3104	-3.182	1.541
25.472	19.68	0.2812	-3.182	1.429
25.532	18.4	0.2722	-3.463	1.479
25.599	17.39	0.263	-3.557	1.512
25.692	14.65	0.2612	-3.463	1.784
25.745	12.91	0.2594	-3.557	2.01
25.807	11.17	0.2701	-3.463	2.419
25.865	10.44	0.2908	-3.463	2.786
25.923	9.52	0.313	-3.463	3.288
26.005	9.24	0.3423	-3.463	3.703
26.054	9.24	0.3562	-3.369	3.853
26.125	10.16	0.3852	-3.369	3.791
26.183	11.35	0.4064	-3.369	3.58
26.265	14.37	0.4139	-3.369	2.88
26.319	15.38	0.4049	-3.369	2.633
26.402	13.55	0.3952	-3.463	2.917
26.453	12.27	0.3948	-3.463	3.219
26.517	11.26	0.3944	-3.463	3.503
26.586	11.26	0.4109	-3.463	3.649
26.654	11.26	0.4458	-3.369	3.96
26.709	11.99	0.47	-3.401	3.919
26.782	15.93	0.5045	-3.432	3.168
26.839	16.2	0.5374	-3.432	3.317
26.91	15.74	0.574	-3.401	3.646
26.98	16.11	0.5719	-3.463	3.55
27.058	18.58	0.541	-3.369	2.911
27.101	22.61	0.5078	-3.369	2.246
27.175	34.23	0.426	-3.463	1.244
27.239	43.94	0.3449	-3.65	0.785
27.305	56.02	0.2974	-4.68	0.531
27.374	64.62	0.2715	-5.147	0.42
27.433	72.4	0.2703	-5.429	0.373
27.505	75.06	0.2854	-5.429	0.38

27.573	74.6	0.304	-5.429	0.407
27.628	73.04	0.3214	-5.429	0.44
27.699	69.2	0.3339	-5.429	0.482
27.763	66	0.3306	-5.429	0.501
27.828	61.05	0.3204	-5.429	0.525
27.909	56.66	0.2891	-5.335	0.51
27.969	51.08	0.2698	-5.335	0.528
28.027	47.14	0.2561	-5.335	0.543
28.09	42.75	0.2419	-5.335	0.566
28.173	37.9	0.2423	-5.335	0.639
28.219	35.33	0.2439	-5.335	0.69
28.297	32.4	0.243	-5.241	0.75
28.355	32.36	0.2411	-5.241	0.745
28.444	32.36	0.2307	-5.241	0.713
28.487	32.31	0.2236	-5.147	0.692
28.552	33.68	0.2094	-5.054	0.622
28.618	34.97	0.1833	-5.054	0.524
28.695	37.07	0.1556	-4.961	0.42
28.759	38.54	0.136	-5.054	0.353
28.813	39.73	0.1369	-5.054	0.345
28.891	40.28	0.1353	-5.054	0.336
28.955	39.63	0.1222	-5.054	0.308
29.021	38.54	0.1223	-5.054	0.317
29.072	36.71	0.142	-5.054	0.387
29.134	35.06	0.1738	-5.054	0.496
29.2	33.5	0.2044	-4.711	0.61
29.281	29.75	0.2538	-4.711	0.853
29.339	31.03	0.2872	-4.711	0.926
29.399	31.67	0.3599	-4.399	1.136
29.479	35.88	0.4197	-4.399	1.17
29.553	41.01	0.4043	-4.305	0.986
29.599	45.4	0.3792	-4.212	0.835
29.687	49.79	0.2639	-5.241	0.53
29.727	51.35	0.2289	-5.615	0.446
29.805	52.63	0.182	-6.364	0.346
29.863	50.62	0.1732	-6.551	0.342
29.948	43.94	0.2139	-6.458	0.487
29.999	39.36	0.249	-6.458	0.633
30.053	34.23	0.2779	-6.551	0.812
30.131	29.02	0.2796	-6.458	0.964
30.202	25.36	0.2878	-6.551	1.135
30.266	24.26	0.305	-6.458	1.257
30.315	25.4	0.3089	-6.458	1.216
30.399	24.16	0.3009	-6.458	1.245
30.449	25.45	0.2952	-6.271	1.16
30.533	30.66	0.2492	-6.177	0.813
30.594	36.43	0.215	-5.99	0.59

30.645	37.07	0.186	-6.083	0.502
30.711	36.06	0.139	-6.083	0.385
30.796	34.23	0.1104	-6.083	0.323
30.842	32.86	0.1109	-6.083	0.338
30.911	30.57	0.1063	-6.083	0.348
30.976	30.3	0.1146	-6.083	0.378
31.063	30.21	0.1253	-6.083	0.415
31.105	31.85	0.1244	-6.083	0.39
31.197	33.04	0.1159	-5.99	0.351
31.247	33.32	0.1159	-5.896	0.348
31.309	33.32	0.1132	-5.896	0.34
31.386	32.77	0.1396	-5.771	0.426
31.44	28.56	0.1613	-5.771	0.565
31.504	32.04	0.1461	-5.771	0.456
31.576	34.69	0.1751	-5.615	0.505
31.632	36.98	0.1986	-5.615	0.537
31.699	46.04	0.2135	-5.615	0.464
31.78	53.73	0.1658	-5.522	0.309
31.84	65.26	0.1596	-5.803	0.245
31.897	73.04	0.1941	-6.458	0.266
31.957	79.54	0.2473	-7.113	0.311
32.043	82.56	0.2519	-7.113	0.305
32.09	81.28	0.2519	-7.113	0.31
32.161	78.17	0.2519	-7.113	0.322
32.228	74.69	0.252	-6.926	0.337
32.295	69.29	0.2543	-6.926	0.367
32.363	63.52	0.2506	-6.926	0.394
32.444	57.21	0.2768	-6.926	0.484
32.491	52.91	0.2873	-6.926	0.543
32.581	47.6	0.2855	-6.926	0.6
32.625	46.22	0.2839	-6.832	0.614
32.713	44.49	0.2784	-6.832	0.626
32.757	45.13	0.2723	-6.739	0.603
32.817	46.59	0.2559	-6.739	0.549
32.895	48.42	0.2116	-6.739	0.437
32.95	49.43	0.1884	-6.739	0.381
33.011	48.79	0.1793	-6.832	0.367
33.072	47.69	0.178	-6.926	0.373
33.154	44.21	0.1691	-6.926	0.382
33.243	39.91	0.196	-6.926	0.491
33.29	37.44	0.2108	-6.926	0.563
33.336	35.97	0.2235	-6.926	0.621
33.427	33.5	0.2341	-6.926	0.699
33.474	32.68	0.2382	-6.832	0.729
33.54	32.49	0.241	-6.832	0.742
33.603	32.77	0.2346	-6.832	0.716
33.679	32.77	0.2646	-6.832	0.807

33.743	32.77	0.3124	-7.019	0.953
33.811	34.6	0.3545	-7.019	1.025
33.87	36.71	0.3863	-7.643	1.052
33.944	38.44	0.381	-7.643	0.991
33.993	42.29	0.3632	-7.643	0.859
34.082	45.95	0.2939	-7.768	0.64
34.125	45.86	0.2532	-8.423	0.552
34.219	44.39	0.1898	-8.798	0.427
34.261	43.3	0.1728	-8.798	0.399
34.327	40.55	0.1696	-8.891	0.418
34.39	38.26	0.2023	-8.891	0.529
34.472	33.23	0.2479	-8.891	0.746
34.528	30.11	0.29	-8.891	0.963
34.59	26.18	0.3409	-8.891	1.302
34.659	22.79	0.3548	-8.798	1.557
34.721	19.13	0.317	-8.798	1.657
34.796	16.75	0.3144	-8.798	1.877
34.845	15.65	0.3412	-8.798	2.18
34.931	14.1	0.4065	-8.798	2.884
34.998	13.73	0.4562	-8.798	3.323
35.048	13.55	0.5025	-8.798	3.709
35.108	13.64	0.5456	-8.798	4
35.198	13.36	0.5931	-8.704	4.438
35.241	13	0.6097	-8.704	4.691
35.326	13.09	0.6158	-8.704	4.705
35.378	13.27	0.6031	-8.704	4.544
35.434	13	0.5463	-8.704	4.203
35.508	12.17	0.3568	-8.704	2.931
35.589	10.98	0.3788	-8.704	3.449
35.643	10.34	0.3674	-8.704	3.552
35.726	9.98	0.406	-8.61	4.07
35.78	10.07	0.4094	-8.579	4.066
35.835	8.97	0.3589	-8.548	4.001
35.91	18.58	0.3406	-8.548	1.833
35.97	39.08	0.3684	-8.548	0.942
36.044	74.6	0.3596	-8.423	0.482
36.095	109.75	0.4059	-8.423	0.37
36.162	136.2	0.4626	-8.382	0.34
36.23	157.62	0.5177	-8.338	0.328
36.306	169.43	0.5762	-8.338	0.34
36.356	181.79	0.6188	-8.263	0.34
36.432	193.69	0.6653	-8.263	0.343
36.488	198.63	0.6918	-8.2	0.348
36.557	200.64	0.7316	-8.2	0.365
36.622	200.73	0.7579	-8.135	0.378
36.708	199.27	0.7657	-8.135	0.384
36.753	197.16	0.756	-8.087	0.383

36.824	191.12	0.7283	-8.087	0.381
36.886	184.44	0.6941	-8.087	0.376
36.947	172.91	0.6574	-7.955	0.38
37.011	164.76	0.6236	-8.049	0.378
37.077	153.96	0.6001	-7.955	0.39
37.157	147.64	0.5633	-7.862	0.382
37.212	139.59	0.5383	-7.862	0.386
37.279	133.37	0.5053	-7.862	0.379
37.34	128.42	0.4956	-7.862	0.386
37.424	122.56	0.4919	-7.862	0.401
37.471	119.91	0.4795	-7.768	0.4
37.539	116.8	0.4561	-7.768	0.39
37.602	118.9	0.4249	-7.862	0.357
37.666	125.58	0.3868	-7.768	0.308
37.733	129.98	0.3381	-7.862	0.26
37.808	132.82	0.34	-7.768	0.256
37.871	133.09	0.3648	-7.675	0.274
37.938	132.08	0.4608	-7.768	0.349
38	131.26	0.5144	-7.675	0.392
38.06	130.16	0.4194	-7.675	0.322
38.124	129.06	0.4262	-7.675	0.33
38.191	124.85	0.4536	-7.675	0.363
38.271	117.99	0.4627	-7.675	0.392
38.326	95.93	0.4534	-7.612	0.473
38.393	92.63	0.4306	-7.612	0.465
38.473	83.2	0.3793	-7.55	0.456
38.521	74.78	0.36	-7.55	0.481
38.596	65.17	0.3539	-7.487	0.543
38.651	59.31	0.3538	-7.581	0.596
38.723	53.73	0.3276	-7.581	0.61
38.799	50.89	0.3293	-7.581	0.647
38.846	50.44	0.3239	-7.394	0.642
38.92	50.89	0.3413	-7.394	0.671
39.005	50.53	0.3364	-7.394	0.666
39.051	50.89	0.3459	-7.3	0.68
39.113	50.71	0.3702	-7.394	0.73
39.18	50.44	0.3976	-7.394	0.788
39.249	51.53	0.4238	-7.394	0.822
39.307	53.46	0.4777	-7.394	0.894
39.376	56.84	0.5307	-7.394	0.934
39.45	64.9	0.5725	-7.44	0.882
39.514	73.68	0.5169	-7.487	0.702
39.587	79.82	0.3599	-7.487	0.451
39.64	85.4	0.3128	-7.768	0.366
39.718	88.15	0.2475	-7.675	0.281
39.792	86.41	0.2548	-7.862	0.295
39.848	81.1	0.2659	-7.862	0.328

39.941	71.12	0.2858	-7.862	0.402
39.965	71.12	0.2927	-7.862	0.411
40.027	63.52	0.3017	-7.862	0.475
40.113	58.67	0.2907	-7.893	0.495
40.167	54.19	0.2682	-7.924	0.495
40.23	48.51	0.2279	-7.924	0.47
40.307	45.77	0.2015	-7.924	0.44
40.364	44.03	0.2182	-7.862	0.496
40.441	41.28	0.1701	-7.955	0.412
40.49	39.45	0.2076	-7.955	0.526
40.581	37.35	0.2676	-7.955	0.717
40.634	36.61	0.2738	-7.955	0.748
40.714	37.35	0.3256	-7.955	0.872
40.761	35.7	0.342	-7.862	0.958
40.857	37.35	0.2719	-8.143	0.728
40.903	38.44	0.2176	-8.236	0.566
40.988	37.44	0.1503	-8.61	0.401
41.011	36.8	0.1662	-8.798	0.452
41.08	34.6	0.2394	-8.891	0.692
41.157	32.31	0.3959	-8.891	1.225
41.227	30.66	0.5423	-8.891	1.769
41.299	29.93	0.5983	-8.891	1.999
41.343	30.39	0.5976	-8.891	1.967
41.411	35.24	0.5394	-8.985	1.531
41.484	45.77	0.4478	-8.891	0.978
41.554	67.74	0.401	-8.798	0.592
41.609	80.46	0.3968	-8.891	0.493
41.684	91.81	0.3927	-9.172	0.428
41.747	96.94	0.4455	-9.172	0.46
41.803	98.67	0.5254	-9.172	0.532
41.876	99.77	0.6579	-8.954	0.659
41.955	99.04	0.8288	-8.954	0.837
41.997	108.56	0.8908	-8.954	0.821
42.065	127.23	0.8835	-8.704	0.694
42.134	145.36	0.7629	-8.704	0.525
42.194	158.81	0.6345	-8.704	0.4
42.263	173.18	0.7924	-8.798	0.458
42.326	178.31	0.7568	-8.985	0.424
42.389	178.86	0.8873	-9.078	0.496
42.464	175.84	1.1022	-9.078	0.627
42.551	168.79	1.2711	-9.078	0.753
42.596	165.49	1.336	-9.078	0.807
42.661	161.1	1.3708	-9.078	0.851
42.728	161.15	1.3764	-9.078	0.854
42.788	161.19	1.3351	-8.985	0.828
42.857	167.87	1.3141	-8.985	0.783
42.941	179.59	1.3931	-8.985	0.776

42.998	185.45	1.4507	-8.985	0.782
43.06	192.59	1.4382	-8.985	0.747
43.12	196.98	1.3858	-8.985	0.704
43.176	198.08	1.3247	-8.985	0.669
43.264	204.85	0.7962	-8.891	0.389
43.312	210.53	0.5433	-8.798	0.258
43.376	226.46	0.5595	-8.798	0.247
43.445	235.33	0.6183	-8.798	0.263
43.514	243.57	0.6738	-8.704	0.277
43.574	246.04	0.6932	-7.846	0.282
43.638	246.46	0.692	-7.846	0.281
43.704	246.46	0.693	-7.846	0.281
43.782	246.87	0.732	-7.019	0.297
43.838	253.55	0.783	-7.155	0.309
43.92	264.35	0.8876	-7.008	0.336
43.974	270.48	0.9046	-6.868	0.334
44.034	279.09	0.9809	-6.868	0.351
44.112	277.35	1.1455	-6.868	0.413
44.162	276.98	1.2217	-6.743	0.441
44.24	272.13	1.3168	-6.619	0.484
44.302	273.6	1.3528	-6.619	0.494
44.371	271.99	1.4594	-6.619	0.537
44.431	271.86	1.5767	-6.413	0.58
44.497	277.26	1.6773	-6.413	0.605
44.557	279.36	1.772	-6.314	0.634
44.624	283.48	1.837	-6.314	0.648
44.686	282.11	1.8816	-6.231	0.667
44.775	278.54	1.8832	-6.231	0.676
44.823	273.05	1.8845	-6.157	0.69
44.887	269.02	1.8625	-6.157	0.692
44.956	265.82	1.8066	-6.083	0.68
45.024	268.2	1.7549	-6.083	0.654
45.085	270.3	1.7346	-6.083	0.642
45.159	274.6	1.7233	-5.99	0.628
45.222	277.17	1.3472	-5.99	0.486
45.296	285.13	1.0103	-5.99	0.354
45.356	292.18	1.0766	-5.99	0.368
45.418	299.59	1.1103	-5.896	0.371
45.491	304.35	1.1687	-5.896	0.384
45.538	304.99	1.2256	-5.818	0.402
45.615	300.83	1.3073	-5.79	0.435
45.683	296.66	1.3385	-5.79	0.451
45.742	302.43	1.3744	-5.739	0.454
45.803	309.48	1.4285	-5.739	0.462
45.875	312.77	1.3854	-5.739	0.443
45.932	315.24	1.3961	-5.708	0.443
46.008	319.64	1.455	-5.708	0.455

46.063	322.29	1.4382	-5.68	0.446
46.151	314.6	1.4306	-5.651	0.455
46.206	302.8	1.3252	-5.128	0.438
46.276	285.95	0.8942	-5.128	0.313
46.335	271.67	0.6902	-5.128	0.254
46.402	256.66	0.6752	-5.335	0.263
46.465	230.21	0.6972	-4.424	0.303
46.531	196.98	0.6746	-4.424	0.342
46.599	187	0.6665	-4.048	0.356
46.655	169.34	0.5195	-4.048	0.307
46.736	150.67	0.2857	-4.048	0.19
46.802	132.91	0.1941	-3.557	0.146
46.858	120.64	0.1684	-3.369	0.14
46.921	102.52	0.1952	-3.182	0.19
47.002	89.7	0.2773	-3.182	0.309
47.052	78.17	0.2765	-3.088	0.354
47.128	68.65	0.2661	-2.995	0.388
47.182	66.82	0.2532	-2.995	0.379
47.261	60.23	0.2777	-2.808	0.461
47.313	52.91	0.2996	-2.34	0.566
47.382	52.07	0.3628	-2.34	0.697
47.448	43.11	0.4258	-2.34	0.988
47.53	40.09	0.4481	-1.778	1.118
47.582	38.99	0.5071	-1.684	1.3
47.667	37.62	0.7153	-1.778	1.901
47.712	36.98	0.7786	-1.872	2.105
47.775	36.43	0.8319	-2.527	2.283
47.842	35.79	0.9021	-3.088	2.521
47.914	36.43	0.9428	-3.65	2.588
47.98	35.33	1.0055	-3.931	2.846
48.04	36.43	1.0401	-4.586	2.855
48.101	36.71	1.1013	-5.147	3
48.172	36.98	1.1484	-5.615	3.105
48.253	36.61	1.1088	-5.896	3.028
48.319	38.35	1.05	-6.083	2.738
48.372	44.85	0.953	-5.896	2.125
48.425	56.93	0.8374	-5.803	1.471
48.497	86.5	0.7547	-5.896	0.873
48.56	99.5	0.7113	-5.99	0.715
48.629	108.38	0.6683	-5.99	0.617
48.692	109.2	0.6629	-5.99	0.607
48.773	111.21	0.6732	-6.083	0.605
48.823	112.31	0.6717	-6.083	0.598
48.902	113.96	0.683	-6.083	0.599
48.96	117.71	0.7071	-6.083	0.601
49.017	127.23	0.7324	-5.99	0.576
49.083	140.78	0.7437	-5.99	0.528

49.168	158.26	0.7569	-5.896	0.478
49.231	171.26	0.8142	-5.896	0.475
49.298	178.95	0.8502	-5.803	0.475
49.361	182.43	0.8881	-5.803	0.487
49.411	185.45	0.9076	-5.444	0.489
49.479	185.4	0.9076	-5.322	0.49
49.556	185.36	0.9068	-5.322	0.489
49.619	188.56	0.9196	-5.115	0.488
49.702	191.12	0.9391	-5.115	0.491
49.754	190.85	0.9997	-5.115	0.524
49.807	188.19	0	-4.867	0
49.888	188.38	0	-4.867	0
49.943	190.12	0	-4.867	0
50.012	193.78	0	-4.68	0
50.069	196.89	0	-4.68	0
50.133	174.92	0	-4.493	0

Depth (ft)	Tip Stress (tsf)	Sleeve Stress (tsf)	Pore Pressure (psi)	Ratio (%)
0	0	0.0201	0	0
0.077	2.84	0.0305	0	1.072
0.133	3.67	0.0382	0	1.043
0.207	5.32	0.0491	0.094	0.923
0.267	6.97	0.0552	0	0.792
0.353	9.81	0.0598	0	0.61
0.406	12.28	0.0647	0	0.527
0.463	15.21	0.0616	0	0.405
0.526	17.6	0.0588	0	0.334
0.594	21.9	0.0722	0	0.33
0.657	23.64	0.0837	0	0.354
0.743	27.4	0.1036	0	0.378
0.791	28.04	0.1211	0	0.432
0.86	29.14	0.1529	0	0.525
0.92	29.42	0.1635	0.094	0.556
0.989	30.79	0.1604	0.094	0.521
1.067	33.27	0.1342	0.094	0.404
1.121	36.47	0.1153	0.094	0.316
1.191	41.88	0.1287	0.094	0.307
1.25	48.02	0.155	0.094	0.323
1.324	57.37	0.2371	0.094	0.413
1.385	65.25	0.3232	0.094	0.495
1.45	73.13	0.3388	0.094	0.463
1.511	76.61	0.374	0.065	0.488
1.576	80.46	0.509	0.094	0.633
1.653	83.85	0.4849	0.051	0.578
1.71	86.24	0.3792	0.094	0.44
1.791	90.82	0.2387	0.094	0.263
1.843	96.04	0.2587	0.094	0.269
1.911	96.59	0.2847	0.094	0.295
1.975	97.6	0.3168	0.094	0.325
2.055	102	0.3721	0.094	0.365
2.106	101.63	0.3988	0.094	0.392
2.176	101.27	0.4155	0.094	0.41
2.235	104.57	0.4176	0.094	0.399
2.299	108.78	0.4298	0.094	0.395
2.366	111.99	0.4599	0.094	0.411
2.433	113.36	0.4909	0.094	0.433
2.504	114.74	0.4984	0.094	0.434
2.568	116.76	0.5022	0.094	0.43
2.643	117.95	0.5144	0.094	0.436
2.701	118.04	0.5227	0.094	0.443
2.756	119.23	0.5271	0.094	0.442
2.824	119.41	0.5368	0.094	0.45

2.893	120.24	0.5324	0.094	0.443
2.955	121.8	0.5286	0.094	0.434
3.021	123.35	0.5204	0	0.422
3.107	124.73	0.5217	0	0.418
3.158	124.45	0.5224	0	0.42
3.227	123.26	0.5224	0	0.424
3.285	122.35	0.5224	0	0.427
3.36	119.96	0.5171	0	0.431
3.419	118.13	0.5051	0	0.428
3.481	116.02	0.4898	0	0.422
3.548	112.72	0.4764	0	0.423
3.612	106.67	0.4536	0	0.425
3.681	101.45	0.4232	0	0.417
3.754	93.84	0.4037	-0.047	0.43
3.819	87.8	0.4023	-0.055	0.458
3.88	79.18	0.4056	-0.055	0.512
3.939	73.77	0.3979	-0.088	0.539
4.018	67.54	0.3934	-0.088	0.582
4.084	64.52	0.3979	-0.088	0.617
4.134	63.05	0.3925	-0.107	0.623
4.212	64.75	0.3084	-0.107	0.476
4.272	62.5	0.2418	-0.125	0.387
4.336	64.98	0.2672	-0.144	0.411
4.4	68.46	0.2983	-0.144	0.436
4.463	72.31	0.3235	-0.119	0.447
4.529	74.87	0.3293	-0.094	0.44
4.601	71.57	0.3454	-0.164	0.483
4.678	71.02	0.3511	-0.209	0.494
4.732	68.64	0.3534	-0.21	0.515
4.793	63.78	0.3596	-0.21	0.564
4.859	60.21	0.3643	-0.234	0.605
4.926	54.44	0.365	-0.246	0.67
5.001	50.31	0.3517	-0.257	0.699
5.075	46.56	0.315	-0.257	0.677
5.13	45.27	0.2942	-0.283	0.65
5.204	43.16	0.2687	-0.283	0.622
5.257	42.52	0.2469	-0.325	0.581
5.322	41.7	0.227	-0.325	0.544
5.39	40.23	0.2259	-0.325	0.562
5.452	39.04	0.2316	-0.375	0.593
5.515	37.21	0.2274	-0.375	0.611
5.584	35.74	0.2292	-0.398	0.641
5.645	33.91	0.2107	-0.398	0.621
5.715	31.89	0.2085	-0.398	0.654
5.784	31.25	0.2013	-0.408	0.644
5.854	32.44	0.2121	-0.408	0.654
5.93	37.39	0.2155	-0.418	0.576

5.984	43.16	0.2021	-0.423	0.468
6.042	48.94	0.2021	-0.428	0.413
6.115	58.93	0.2182	-0.402	0.37
6.172	62.23	0.2387	-0.402	0.384
6.255	63.69	0.2894	-0.375	0.454
6.305	64.24	0.3322	-0.468	0.517
6.368	64.61	0.4205	-0.375	0.651
6.44	64.88	0.4378	-0.468	0.675
6.525	66.17	0.4492	-0.375	0.679
6.576	70.11	0.4484	-0.468	0.64
6.64	74.6	0.4484	-0.468	0.601
6.712	77.71	0.3769	-0.468	0.485
6.785	84.04	0.3338	-0.281	0.397
6.83	86.97	0.3357	-0.281	0.386
6.893	91.92	0.3343	-0.281	0.364
6.978	97.05	0.3687	-0.281	0.38
7.026	96.04	0.3911	-0.265	0.407
7.093	86.05	0.4202	-0.265	0.488
7.159	87.89	0.4303	-0.265	0.49
7.25	85.87	0.4247	-0.226	0.495
7.309	83.58	0.4136	-0.226	0.495
7.379	79.91	0.3971	-0.187	0.497
7.418	76.34	0.3857	-0.187	0.505
7.495	69.01	0.3571	-0.187	0.517
7.565	63.14	0.3216	-0.187	0.509
7.619	56.64	0.3004	-0.281	0.53
7.689	50.5	0.2624	-0.281	0.52
7.743	44.81	0.2299	-0.281	0.513
7.83	37.57	0.1872	-0.281	0.498
7.89	32.35	0.1608	-0.281	0.497
7.961	27.95	0.1376	-0.281	0.492
8.006	25.29	0.1242	-0.281	0.491
8.1	20.34	0.1084	-0.281	0.533
8.146	18.79	0.1095	-0.281	0.583
8.227	16.77	0.107	-0.281	0.638
8.278	15.95	0.1082	-0.281	0.678
8.349	14.3	0.1163	-0.281	0.813
8.417	13.2	0.1201	-0.281	0.91
8.468	12.1	0.1209	-0.281	0.999
8.543	11.27	0.1222	-0.281	1.085
8.596	10.81	0.1206	-0.281	1.116
8.682	9.62	0.1243	-0.281	1.292
8.74	9.07	0.1201	-0.281	1.324
8.811	9.07	0.0858	-0.281	0.946
8.865	9.07	0.0599	-0.281	0.66
8.932	9.07	0.0496	-0.187	0.547
8.995	10.91	0.0546	-0.187	0.501

9.07	20.25	0.0672	-0.187	0.332
9.134	27.13	0.083	-0.281	0.306
9.188	28.96	0.1164	-0.468	0.402
9.265	28.32	0.1249	-0.468	0.441
9.346	26.76	0.1372	-0.468	0.513
9.392	27.58	0.1401	-0.468	0.508
9.477	32.44	0.1401	-0.468	0.432
9.538	35.65	0.1401	-0.375	0.393
9.581	36.38	0.1402	-0.375	0.385
9.659	36.84	0.1527	-0.375	0.415
9.716	36.84	0.1423	-0.375	0.386
9.803	35.47	0.1109	-0.375	0.313
9.852	33.63	0.1171	-0.375	0.348
9.931	29.33	0.1292	-0.375	0.44
9.985	27.58	0.1367	-0.375	0.496
10.044	27.45	0.1453	-0.422	0.529
10.112	27.45	0.1539	-0.422	0.561
10.187	27.31	0.1601	-0.422	0.586
10.249	27.95	0.161	-0.468	0.576
10.32	28.41	0.1584	-0.468	0.558
10.389	28.78	0.1487	-0.468	0.517
10.433	29.23	0.1461	-0.468	0.5
10.52	30.24	0.1487	-0.468	0.492
10.566	30.79	0.1522	-0.468	0.494
10.654	31.89	0.1709	-0.468	0.536
10.697	32.72	0.178	-0.468	0.544
10.764	35.74	0.1727	-0.468	0.483
10.837	38.49	0.1772	-0.468	0.46
10.894	40.05	0.1806	-0.375	0.451
10.969	39.87	0.1709	-0.468	0.429
11.032	38.67	0.1707	-0.468	0.441
11.102	37.48	0.1577	-0.468	0.421
11.16	36.29	0.1483	-0.468	0.409
11.241	35.1	0.1489	-0.468	0.424
11.287	35.01	0.1543	-0.375	0.441
11.379	35.01	0.1751	-0.468	0.5
11.42	35.65	0.1778	-0.468	0.499
11.508	38.12	0.239	-0.468	0.627
11.554	41.7	0.2662	-0.468	0.638
11.624	45.64	0.2533	-0.468	0.555
11.688	48.75	0.2665	-0.468	0.547
11.779	53.06	0.2938	-0.375	0.554
11.823	53.98	0.3343	-0.375	0.619
11.915	52.33	0.3704	-0.375	0.708
11.954	51.96	0.3698	-0.375	0.712
12.025	52.05	0.3716	-0.375	0.714
12.093	48.02	0.3859	-0.375	0.804

12.142	43.81	0.409	-0.375	0.934
12.231	35.01	0.4698	-0.375	1.342
12.274	31.43	0.5024	-0.281	1.598
12.362	23.55	0.491	-0.281	2.085
12.409	18.6	0.4187	-0.281	2.251
12.481	14.94	0.3507	-0.281	2.348
12.544	12.46	0.3758	-0.281	3.015
12.627	10.63	0.3651	-0.281	3.434
12.677	10.26	0.3223	-0.281	3.14
12.732	10.68	0.2369	0.359	2.219
12.802	9.99	0.1772	0.844	1.774
12.871	10.72	0.1385	0.937	1.292
12.935	11.27	0.1094	0.937	0.971
13.016	14.39	0.1081	1.031	0.751
13.073	20.8	0.1068	1.125	0.514
13.141	27.31	0.1233	1.031	0.451
13.205	29.51	0.1504	0.562	0.51
13.26	30.15	0.1769	0.094	0.587
13.344	30.61	0.236	0.094	0.771
13.386	31.07	0.2499	0	0.804
13.452	32.35	0.2617	-0.094	0.809
13.521	34.92	0.2693	-0.094	0.771
13.609	38.12	0.2862	-0.094	0.751
13.657	39.96	0.2922	-0.094	0.731
13.721	40.51	0.2896	-0.094	0.715
13.792	38.22	0.2719	-0.094	0.711
13.883	34.92	0.2506	-0.094	0.718
13.923	33.54	0.2352	-0.094	0.701
13.986	32.08	0.2101	-0.094	0.655
14.061	31.43	0.1958	-0.094	0.623
14.115	31.16	0.1915	-0.094	0.615
14.186	30.52	0.1902	-0.094	0.623
14.24	30.56	0.1902	-0.094	0.622
14.333	30.43	0.1921	-0.187	0.631
14.372	30.61	0.1939	-0.187	0.633
14.45	31.16	0.1922	-0.187	0.617
14.511	31.43	0.1934	-0.187	0.615
14.598	32.44	0.1962	-0.094	0.605
14.643	32.81	0.1979	-0.094	0.603
14.732	33.45	0.1942	-0.094	0.58
14.775	33.54	0.1882	-0.094	0.561
14.843	33.72	0.1845	-0.094	0.547
14.914	33.91	0.1711	-0.094	0.504
14.961	33.82	0.1545	-0.094	0.457
15.042	33.72	0.1301	-0.094	0.386
15.129	33.36	0.1301	-0.094	0.39
15.185	32.63	0.1301	-0.094	0.399

15.228	31.98	0.1418	-0.187	0.443
15.298	30.33	0.2053	-0.078	0.677
15.358	21.08	0.2545	0	1.207
15.43	23.09	0.2995	0	1.297
15.492	19.25	0.3225	0	1.676
15.57	15.95	0.3551	0	2.227
15.621	13.56	0.3678	0	2.712
15.716	11.46	0.3574	0	3.12
15.764	10.72	0.3454	0	3.221
15.83	10.26	0.312	0	3.039
15.881	9.99	0.2919	0	2.922
15.954	9.62	0.2576	0	2.677
16.032	9.44	0.2076	0	2.199
16.116	9.44	0.1805	0	1.912
16.152	9.44	0.1805	0	1.912
16.21	9.44	0.1811	0	1.919
16.293	9.35	0.179	0	1.915
16.344	9.35	0.1803	0	1.928
16.43	9.9	0.1819	0	1.838
16.479	10.63	0.1801	0	1.695
16.565	10.81	0.1801	0.094	1.666
16.612	11	0.1905	0.094	1.732
16.697	12.74	0.234	0.094	1.837
16.745	13.11	0.2491	0.094	1.901
16.814	13.65	0.2542	0.094	1.862
16.907	13.01	0.2604	-0.094	2.001
16.937	12.83	0.2682	-0.094	2.09
17.002	12.28	0.3001	-0.094	2.444
17.07	10.91	0.3238	-0.094	2.969
17.151	12.28	0.2932	0	2.387
17.194	10.63	0.2802	0	2.636
17.28	12.28	0.2813	0	2.291
17.333	13.75	0.2879	0	2.094
17.418	14.3	0.3158	0	2.209
17.47	13.29	0.3288	0	2.475
17.544	12.01	0.3363	0	2.801
17.597	11	0.3371	0	3.066
17.662	9.9	0.3362	0	3.397
17.73	9.07	0.3274	0	3.608
17.787	8.61	0.3202	0	3.717
17.866	8.61	0.3183	0	3.694
17.914	8.71	0.3183	0	3.655
18	8.71	0.3231	0	3.711
18.046	8.71	0.3223	0	3.701
18.138	8.8	0.3208	0	3.646
18.21	8.8	0.3229	0	3.67
18.269	8.71	0.3292	0	3.781

18.319	8.98	0.3323	0	3.7
18.38	8.61	0.3323	0.094	3.857
18.456	8.98	0.3323	0.094	3.7
18.505	8.89	0.3323	0.094	3.738
18.595	8.98	0.3229	0.094	3.595
18.64	8.98	0.3217	0.094	3.582
18.704	8.98	0.3301	0.094	3.675
18.77	9.16	0.3279	0.094	3.578
18.865	9.26	0.3429	0.094	3.704
18.907	9.35	0.3533	0.094	3.78
18.976	9.9	0.3607	0.094	3.644
19.043	10.36	0.3615	0.094	3.491
19.103	11	0.3708	0.094	3.372
19.179	11.64	0.4035	0.094	3.467
19.255	12.56	0.4371	0.187	3.481
19.307	12.65	0.4388	0.187	3.47
19.365	11.82	0.4347	0.187	3.677
19.444	11.55	0.4496	0.187	3.894
19.49	11.64	0.4678	0.094	4.019
19.579	12.37	0.5148	0.281	4.161
19.623	12.74	0.5227	0.281	4.103
19.709	14.2	0.4959	0	3.491
19.76	14.85	0.4768	0.094	3.212
19.839	16.68	0.4602	0.187	2.759
19.886	17.5	0.4658	0.187	2.661
19.962	19.8	0.4766	0.281	2.408
20.027	20.62	0.482	0.187	2.338
20.081	19.34	0.4864	0.187	2.515
20.166	16.22	0.485	0.187	2.99
20.225	14.2	0.4877	0.187	3.433
20.278	13.2	0.489	0.187	3.705
20.346	12.1	0.4845	0.187	4.005
20.422	11.27	0.4812	0.187	4.269
20.478	11	0.4726	0.187	4.297
20.54	11.09	0.4448	0.281	4.011
20.61	10.45	0.4191	0.281	4.011
20.701	10.45	0.386	0.281	3.695
20.744	10.45	0.3752	0.281	3.591
20.823	10.36	0.3632	0.281	3.507
20.889	10.45	0.3509	0.281	3.359
20.942	10.36	0.3451	0.281	3.333
21.013	10.45	0.3363	0.281	3.219
21.088	11	0.3363	0.281	3.058
21.156	11.55	0.3363	0.375	2.912
21.221	12.19	0.352	0.375	2.888
21.282	12.65	0.3862	0.375	3.053
21.332	12.37	0.4123	0.375	3.333

21.426	14.02	0.4494	0.375	3.205
21.466	14.2	0.4602	0.375	3.239
21.55	15.03	0.4821	0.468	3.208
21.598	15.76	0.4958	0.468	3.146
21.659	14.85	0.5082	0.468	3.423
21.733	14.94	0.5332	0.468	3.57
21.811	16.13	0.5543	0.468	3.436
21.869	17.5	0.5676	0.468	3.243
21.934	18.7	0.5783	0.468	3.093
22.009	20.16	0.5848	0.468	2.9
22.049	20.89	0.5884	0.468	2.816
22.117	20.99	0.608	0.281	2.897
22.186	19.8	0.6225	-0.375	3.145
22.247	17.23	0.6216	-0.468	3.608
22.316	14.2	0.5901	-0.375	4.154
22.396	12.28	0.5435	-0.468	4.426
22.458	11.09	0.5163	-0.375	4.656
22.51	10.26	0.4884	-0.375	4.758
22.585	9.71	0.416	-0.375	4.282
22.66	9.35	0.3628	-0.375	3.881
22.723	9.71	0.3492	-0.375	3.594
22.774	9.16	0.3495	-0.375	3.814
22.854	9.71	0.3628	-0.375	3.735
22.924	10.81	0.3655	-0.375	3.38
22.99	11.27	0.3598	-0.375	3.192
23.036	11.36	0.3521	-0.281	3.098
23.114	10.72	0.3596	-0.375	3.353
23.171	9.71	0.3761	-0.281	3.872
23.229	9.35	0.3873	-0.375	4.143
23.309	9.35	0.3972	-0.281	4.249
23.385	9.35	0.4111	-0.281	4.398
23.443	9.35	0.4363	-0.281	4.667
23.503	9.9	0.4766	-0.281	4.815
23.572	10.91	0.5077	-0.281	4.655
23.624	11.82	0.5024	-0.281	4.25
23.691	13.56	0.4891	-0.281	3.606
23.78	18.05	0.4661	-0.281	2.582
23.843	22.82	0.4257	-0.281	1.865
23.927	30.79	0.376	-0.281	1.221
23.968	34.92	0.3058	-0.281	0.876
24.024	39.04	0.2104	-0.281	0.539
24.114	41.61	0.1698	-0.281	0.408
24.156	42.25	0.1538	-0.281	0.364
24.228	43.26	0.1445	-0.281	0.334
24.292	43.62	0.1603	-0.141	0.368
24.364	41.51	0.1791	-0.094	0.431
24.431	40.51	0.1932	0	0.477

24.475	38.49	0.2039	0	0.53
24.543	36.47	0.2475	0	0.679
24.61	31.34	0.3067	0	0.979
24.676	25.84	0.3741	0	1.448
24.747	20.34	0.4645	0	2.283
24.83	15.85	0.5403	0	3.408
24.877	14.48	0.5492	0	3.793
24.948	13.11	0.5259	0	4.013
25.013	11.73	0.4912	0	4.187
25.071	10.17	0.4502	0	4.426
25.147	8.8	0.4098	0	4.658
25.208	8.25	0.3796	0.094	4.603
25.268	8.25	0.3476	0.094	4.215
25.346	8.34	0.3053	0.094	3.661
25.414	8.98	0.2854	0.094	3.177
25.463	9.16	0.2826	0.094	3.083
25.527	8.98	0.2843	0.094	3.165
25.599	8.89	0.2942	0.094	3.31
25.685	8.71	0.2833	0.094	3.254
25.737	8.52	0.2727	0.094	3.2
25.803	8.61	0.2608	0.094	3.027
25.88	8.61	0.2376	0.094	2.758
25.949	8.34	0.2058	0.094	2.468
25.997	8.25	0.1744	0.187	2.115
26.066	8.16	0.1711	0.281	2.098
26.136	8.16	0.2089	0.375	2.561
26.189	8.16	0.2105	0.375	2.581
26.262	8.16	0.1983	0.375	2.431
26.313	8.25	0.2339	0.468	2.835
26.38	9.26	0.2846	0.468	3.075
26.469	13.47	0.3843	0.656	2.852
26.511	17.5	0.4044	0.656	2.311
26.598	22.91	0.4123	0.75	1.8
26.644	25.84	0.4169	0.562	1.613
26.722	29.14	0.4511	-1.312	1.548
26.783	29.88	0.4889	-1.968	1.636
26.841	29.51	0.5119	-2.155	1.735
26.911	28.41	0.5304	-2.155	1.867
26.975	24.65	0.5539	-2.155	2.247
27.046	22.27	0.5931	-2.155	2.663
27.104	18.79	0.6567	-2.343	3.496
27.181	15.49	0.7605	-2.343	4.91
27.253	14.66	0.8259	-2.343	5.633
27.319	16.04	0.8218	-2.343	5.124
27.406	20.16	0.77	-2.343	3.819
27.432	23.37	0.7514	-2.343	3.215
27.496	28.78	0.705	-2.436	2.45

27.582	37.94	0.5843	-2.811	1.54
27.634	43.81	0.4992	-3.092	1.139
27.691	46.19	0.4164	-4.123	0.901
27.765	46.28	0.3368	-4.591	0.728
27.856	45.27	0.3051	-4.873	0.674
27.889	44.36	0.3126	-4.873	0.705
27.971	41.7	0.383	-4.873	0.919
28.035	39.87	0.4112	-4.873	1.032
28.117	39.41	0.4068	-4.873	1.032
28.151	39.41	0.3984	-4.779	1.011
28.234	38.58	0.3718	-4.873	0.964
28.301	38.86	0.3574	-4.873	0.92
28.347	40.23	0.3564	-4.967	0.886
28.44	41.42	0.3215	-4.967	0.776
28.485	41.88	0.2861	-4.967	0.683
28.577	41.06	0.2738	-4.967	0.667
28.617	40.05	0.2608	-4.967	0.651
28.705	38.03	0.3579	-4.967	0.941
28.755	38.03	0.4557	-4.967	1.198
28.844	38.03	0.5198	-4.967	1.367
28.886	38.95	0.5234	-4.967	1.344
28.943	36.84	0.4988	-5.326	1.354
29.006	49.12	0.4237	-5.326	0.863
29.093	67.36	0.3412	-5.326	0.506
29.137	73.22	0.3218	-4.873	0.439
29.204	72.86	0.3083	-5.622	0.423
29.276	66.08	0.2869	-6.559	0.434
29.341	61.77	0.2447	-6.559	0.396
29.408	57.28	0.2457	-6.559	0.429
29.463	51.69	0.2374	-6.559	0.459
29.538	47.75	0.2554	-6.465	0.535
29.632	46.1	0.2945	-6.465	0.639
29.682	46.28	0.3309	-6.465	0.715
29.754	47.38	0.3675	-6.465	0.776
29.813	48.75	0.371	-6.465	0.761
29.86	50.04	0.374	-6.465	0.747
29.945	51.87	0.3665	-6.465	0.707
29.991	54.53	0.3384	-6.653	0.621
30.085	55.99	0.2554	-6.747	0.456
30.124	54.62	0.2238	-6.747	0.41
30.219	49.85	0.1962	-6.559	0.393
30.262	47.56	0.1962	-6.559	0.412
30.355	41.15	0.2727	-6.559	0.663
30.384	39.77	0.2961	-6.653	0.744
30.449	34.18	0.3467	-6.747	1.014
30.518	30.33	0.3987	-6.747	1.314
30.599	26.3	0.484	-6.747	1.84

30.663	24.47	0.5721	-6.559	2.338
30.71	25.89	0.5976	-6.653	2.308
30.799	25.48	0.6045	-6.653	2.373
30.846	25.57	0.6038	-6.653	2.361
30.933	26.21	0.5813	-6.606	2.218
30.985	28.32	0.5607	-6.653	1.98
31.04	30.88	0.2335	-6.559	0.756
31.114	32.53	0.213	-6.559	0.655
31.191	32.35	0.193	-6.747	0.596
31.239	31.53	0.1957	-6.653	0.621
31.34	29.88	0.2434	-6.622	0.815
31.373	27.58	0.2664	-6.622	0.966
31.443	27.68	0.3165	-6.622	1.144
31.518	26.85	0.3741	-6.559	1.393
31.563	26.21	0.4096	-6.559	1.563
31.629	25.11	0.4561	-6.559	1.816
31.712	24.29	0.5031	-6.559	2.072
31.775	23.83	0.5194	-6.747	2.18
31.832	23.46	0.5224	-6.747	2.227
31.918	23	0.5133	-6.747	2.232
31.998	23.64	0.4949	-6.747	2.093
32.041	24.01	0.477	-6.653	1.987
32.105	24.56	0.4372	-6.653	1.78
32.154	24.74	0.4034	-6.653	1.63
32.228	24.19	0.3335	-6.747	1.378
32.285	22.82	0.2774	-6.559	1.216
32.37	19.7	0.2417	-6.559	1.227
32.421	17.14	0.2412	-6.559	1.407
32.499	14.85	0.2408	-6.559	1.622
32.548	13.47	0.2402	-6.559	1.783
32.614	11.82	0.3035	-6.559	2.568
32.682	12.83	0.3259	-6.559	2.54
32.774	16.77	0.3484	-6.465	2.078
32.82	18.97	0.3623	-6.559	1.91
32.906	23.55	0.361	-6.653	1.533
32.955	26.21	0.3271	-6.559	1.248
33.007	28.41	0.2804	-6.559	0.987
33.089	29.88	0.1967	-6.559	0.658
33.173	31.16	0.2277	-6.559	0.731
33.206	31.43	0.2335	-6.559	0.743
33.271	31.53	0.2106	-6.559	0.668
33.355	31.53	0.2896	-6.653	0.919
33.403	31.53	0.3605	-6.59	1.143
33.472	31.98	0.4578	-6.59	1.431
33.542	33.36	0.5542	-6.59	1.661
33.61	34.46	0.6454	-6.559	1.873
33.683	35.01	0.6823	-6.528	1.949

33.745	34	0.7109	-6.544	2.091
33.81	30.79	0.6828	-6.465	2.217
33.9	25.11	0.6319	-6.559	2.516
33.96	20.62	0.5604	-6.372	2.718
33.996	19.7	0.5198	-6.372	2.638
34.083	16.04	0.4582	-6.372	2.857
34.122	14.85	0.4492	-6.372	3.025
34.19	13.29	0.4649	-6.278	3.499
34.262	13.11	0.4626	-6.278	3.53
34.32	13.93	0.4734	-6.278	3.399
34.398	15.58	0.4853	-6.278	3.115
34.473	18.6	0.4991	-6.278	2.683
34.531	25.02	0.4783	-6.184	1.912
34.622	42.52	0.4351	-6.184	1.023
34.664	50.95	0.4142	-6.184	0.813
34.736	60.76	0.3717	-6.184	0.612
34.807	64.06	0.3852	-6.184	0.601
34.843	64.7	0.3751	-6.184	0.58
34.921	62.68	0.3554	-6.278	0.567
34.982	60.21	0.3961	-6.278	0.658
35.069	54.16	0.4692	-6.278	0.866
35.117	50.04	0.515	-6.372	1.029
35.171	45.82	0.5783	-6.278	1.262
35.25	41.24	0.6346	-6.372	1.539
35.339	36.02	0.6662	-6.278	1.85
35.387	34.55	0.7263	-6.184	2.102
35.467	34.37	0.8115	-6.184	2.361
35.499	34.64	0.8251	-6.184	2.382
35.582	32.72	0.79	-6.2	2.415
35.664	33.45	0.7888	-6.2	2.358
35.708	33.27	0.7771	-6.2	2.336
35.783	32.9	0.7239	-6.278	2.2
35.846	32.53	0.6637	-6.145	2.04
35.895	31.34	0.6517	-6.184	2.079
35.964	28.78	0.6679	-6.091	2.321
36.028	25.39	0.6922	-6.091	2.727
36.116	21.72	0.6936	-6.091	3.193
36.163	19.15	0.6938	-6.091	3.623
36.23	17.05	0.698	-6.091	4.095
36.299	15.49	0.7071	-6.091	4.565
36.383	17.05	0.7386	-6.091	4.333
36.418	15.4	0.7553	-6.091	4.906
36.499	17.05	0.7818	-6.091	4.587
36.559	19.89	0.7586	-6.091	3.815
36.646	25.48	0.6665	-5.997	2.616
36.699	28.68	0.6199	-5.997	2.161
36.753	34	0.5954	-5.997	1.751

36.811	36.38	0.5817	-5.997	1.599
36.879	38.49	0.5747	-6.091	1.493
36.968	38.4	0.5458	-5.903	1.421
37.026	37.67	0.5552	-5.903	1.474
37.092	38.03	0.6393	-5.903	1.681
37.149	39.13	0.7082	-6.091	1.81
37.208	41.61	0.7329	-6.091	1.762
37.283	42.25	0.7566	-5.997	1.791
37.344	43.07	0.7571	-5.997	1.758
37.414	43.9	0.7605	-5.997	1.732
37.484	44.81	0.7791	-5.997	1.739
37.534	45.18	0.7837	-5.997	1.735
37.614	46.74	0.7639	-6.091	1.634
37.678	49.49	0.7339	-6.091	1.483
37.761	53.52	0.6954	-6.184	1.299
37.8	57.55	0.565	-6.372	0.982
37.864	63.42	0.3064	-6.372	0.483
37.946	69.01	0.2788	-6.841	0.404
38.001	70.66	0.2664	-7.215	0.377
38.076	70.57	0.3112	-7.215	0.441
38.135	70.75	0.3904	-7.208	0.552
38.192	71.16	0.5111	-7.208	0.718
38.264	68.73	0.7885	-7.2	1.147
38.338	71.57	1.0823	-7.309	1.512
38.401	75.61	1.092	-7.309	1.444
38.492	85.41	0.972	-7.309	1.138
38.534	91.83	0.9122	-7.309	0.993
38.585	102.64	0.8443	-7.403	0.823
38.68	121.7	0.8084	-7.871	0.664
38.721	124.45	0.8072	-7.965	0.649
38.791	123.54	0.7497	-7.965	0.607
38.85	119.23	0.6402	-7.965	0.537
38.936	109.97	0.6057	-7.965	0.551
38.987	101.91	0.5971	-7.965	0.586
39.053	92.93	0.5684	-7.965	0.612
39.118	85.78	0.5298	-7.965	0.618
39.205	75.15	0.4639	-7.965	0.617
39.252	69.47	0.4287	-7.965	0.617
39.313	64.06	0.3904	-7.965	0.609
39.377	59.84	0.3646	-7.965	0.609
39.457	54.99	0.339	-7.965	0.617
39.522	51.69	0.3133	-7.965	0.606
39.597	47.75	0.2807	-7.965	0.588
39.657	46.74	0.281	-7.965	0.601
39.7	45.55	0.2794	-7.965	0.613
39.768	44.72	0.2664	-7.871	0.596
39.837	45.5	0.3027	-7.871	0.665

39.918	43.71	0.3765	-7.871	0.861
39.991	45.46	0.4238	-7.871	0.932
40.029	46.1	0.4473	-7.871	0.97
40.097	50.68	0.4639	-7.871	0.915
40.184	61.31	0.4546	-7.871	0.741
40.24	72.58	0.4161	-7.871	0.573
40.297	85.05	0.333	-7.871	0.392
40.379	100.9	0.2461	-7.871	0.244
40.425	106.77	0.2537	-7.871	0.238
40.5	109.97	0.2768	-7.871	0.252
40.554	102.28	0.3387	-7.871	0.331
40.623	69.19	0.4336	-7.84	0.627
40.695	67.18	0.4795	-7.84	0.714
40.749	59.57	0.5134	-7.84	0.862
40.833	48.39	0.6074	-7.777	1.255
40.881	43.71	0.7006	-7.777	1.603
40.965	30.88	0.8388	-7.777	2.716
41.018	24.19	0.8792	-7.777	3.634
41.104	19.06	0.7931	-7.777	4.161
41.152	18.05	0.7564	-7.777	4.19
41.232	18.42	0.7498	-7.684	4.071
41.285	19.34	0.7779	-7.59	4.023
41.376	29.69	0.8161	-7.59	2.748
41.419	41.7	0.8278	-7.403	1.985
41.47	70.66	0.8413	-7.403	1.191
41.554	117.12	0.8773	-7.403	0.749
41.616	138.48	0.8951	-7.403	0.646
41.681	148.19	0.8829	-7.403	0.596
41.733	159.28	0.8849	-7.403	0.556
41.804	179.26	0.9542	-7.309	0.532
41.873	195.29	1.0276	-7.309	0.526
41.93	192.09	1.0844	-7.293	0.565
41.996	219.21	1.1576	-7.291	0.528
42.07	227.83	1.1951	-7.291	0.525
42.136	228.2	1.2377	-7.253	0.542
42.198	225.08	1.2357	-7.231	0.549
42.259	222.42	1.2221	-7.209	0.549
42.334	216.1	1.1745	-7.209	0.544
42.399	211.24	1.114	-7.209	0.527
42.47	201.8	1.0393	-7.122	0.515
42.523	196.85	0.9679	-7.122	0.492
42.595	190.07	0.8757	-7.122	0.461
42.671	186.59	0.8523	-7.122	0.457
42.717	183.29	0.8241	-7.122	0.45
42.786	172.02	0.7447	-7.122	0.433
42.861	162.58	0.7194	-7.075	0.442
42.931	148.46	0.6126	-7.075	0.413

42.983	143.7	0.4849	-7.075	0.337
43.049	132.06	0.4152	-7.122	0.314
43.121	118.5	0.3682	-6.934	0.311
43.188	107.22	0.4254	-6.934	0.397
43.242	97.33	0.4172	-6.934	0.429
43.317	76.06	0.4717	-6.934	0.62
43.378	62.41	0.5221	-6.934	0.837
43.467	42.98	0.5297	-6.981	1.232
43.51	35.28	0.5022	-6.934	1.423
43.58	24.47	0.4429	-7.122	1.81
43.642	21.08	0.3916	-6.934	1.858
43.701	16.77	0.3558	-6.934	2.122
43.781	14.85	0.3033	-6.841	2.043
43.834	13.93	0.2383	-6.841	1.711
43.907	13.29	0.188	-6.841	1.414
43.971	12.65	0.1585	-6.841	1.253
44.045	12.19	0.1589	-6.841	1.304
44.137	10.72	0.1581	-6.653	1.475
44.166	10.17	0.169	-6.841	1.662
44.227	9.53	0.1848	-6.559	1.939
44.317	8.89	0.1563	-6.559	1.758
44.362	8.52	0.1315	-6.653	1.543
44.423	8.52	0.1101	-6.465	1.292
44.495	8.52	0.1101	-6.465	1.292
44.559	8.98	0.1115	-6.278	1.242
44.626	8.8	0.1262	-6.278	1.435
44.709	8.75	0.1858	-6.278	2.123
44.764	8.75	0.2217	-6.278	2.533
44.839	8.71	0.2462	-6.278	2.828
44.889	10.63	0.2508	-6.278	2.359
44.953	12.74	0.2531	-6.184	1.987
45.024	14.39	0.2791	-6.184	1.94
45.083	15.49	0.295	-6.184	1.905
45.159	17.6	0.3074	-6.184	1.747
45.215	20.07	0.3266	-6.184	1.627
45.305	22.64	0.4295	-6.184	1.897
45.35	22.91	0.4114	-6.184	1.795
45.414	16.13	0.3634	-6.161	2.253
45.483	18.33	0.3563	-6.138	1.944
45.551	16.59	0.3563	-6.138	2.148
45.619	15.85	0.3563	-6.091	2.247
45.672	19.8	0.3501	-6.091	1.769
45.747	31.89	0.3006	-5.997	0.943
45.816	46.1	0.277	-5.997	0.601
45.889	49.76	0.2858	-5.903	0.574
45.933	49.95	0.2543	-5.81	0.509
46.015	46.83	0.3439	-5.716	0.734

46.069	41.33	0.3898	-5.716	0.943
46.157	31.8	0.3811	-5.716	1.199
46.201	27.58	0.361	-5.716	1.309
46.286	22.09	0.3291	-5.622	1.49
46.333	20.07	0.3195	-5.529	1.592
46.414	20.07	0.3062	-5.529	1.526
46.471	20.07	0.3056	-5.435	1.523
46.535	20.07	0.2812	-5.341	1.401
46.605	22.09	0.3255	-5.341	1.474
46.693	22.09	0.3249	-5.341	1.471
46.722	21.35	0.3066	-5.341	1.436
46.789	18.79	0.2921	-5.248	1.555
46.885	15.4	0.3041	-5.248	1.975
46.96	13.56	0.3579	-5.154	2.639
47.005	13.01	0.3487	-5.154	2.679
47.058	12.56	0.3295	-5.154	2.624
47.128	12.56	0.2974	-5.06	2.368
47.191	13.2	0.2612	-4.919	1.98
47.244	13.2	0.2335	-4.919	1.77
47.319	14.57	0.2254	-4.919	1.547
47.389	13.2	0.2279	-4.685	1.727
47.452	12.19	0.2271	-4.685	1.864
47.543	13.24	0.2338	-4.685	1.765
47.592	12.37	0.2258	-4.685	1.825
47.684	13.29	0.2068	-4.591	1.556
47.724	13.75	0.201	-4.591	1.462
47.774	13.56	0.1942	-4.591	1.432
47.861	12.56	0.1823	-4.591	1.452
47.906	11.64	0.1716	-4.591	1.475
47.973	11.36	0.1701	-4.591	1.497
48.04	11.09	0.1774	-4.591	1.6
48.126	11.09	0.1673	-4.498	1.508
48.165	11.09	0.1587	-4.498	1.431
48.251	11.09	0.1408	-4.498	1.27
48.316	11.27	0.1401	-4.498	1.243
48.368	11.36	0.1436	-4.404	1.264
48.44	11.55	0.1534	-4.404	1.328
48.53	11.55	0.1561	-4.404	1.352
48.577	11.73	0.1582	-4.404	1.349
48.627	11.73	0.1601	-4.404	1.365
48.713	11.82	0.1601	-4.404	1.354
48.759	11.82	0.1601	-4.404	1.354
48.824	11.82	0.1587	-4.404	1.342
48.896	11.82	0.1546	-4.404	1.308
48.962	11.73	0.1529	-4.31	1.304
49.026	11.73	0.1533	-4.31	1.307
49.109	11.91	0.1521	-4.31	1.277

49.153	12.01	0.1394	-4.31	1.161
49.222	12.01	0.0965	-4.31	0.804
49.293	12.01	0.1243	-4.217	1.036
49.35	12.01	0.1437	-4.217	1.197
49.426	12.19	0.1669	-4.217	1.37
49.494	12.74	0.1786	-4.123	1.402
49.56	14.66	0.1985	-4.123	1.354
49.608	15.4	0.2127	-4.123	1.381
49.676	14.57	0.2226	-4.029	1.528
49.752	13.56	0.2164	-4.029	1.595
49.812	13.2	0	-3.936	0
49.88	12.74	0	-3.936	0
49.947	12.28	0	-3.936	0
50.019	12.37	0	-3.936	0
50.069	12.37	0	-3.936	0
50.135	12.56	0	-3.936	0

Appendix B
Laboratory Tests

TABLE I
MAXIMUM DENSITY TESTS

Sample	Classification	Optimum Moisture (%)	Maximum Dry Density (lbs/cu.ft)
B-3 @ 2'	Silty SAND	9.0	124.0

TABLE II
EXPANSION TESTS

Sample	Classification	Expansion Index
B-3 @ 2'	Silty SAND	3

TABLE III
ATTERBERG LIMITS

Sample	Liquid Limit	Plastic Limit	Plasticity Index
B-3 @ 15'	25	17	8
B-3 @ 20'	33	18	15

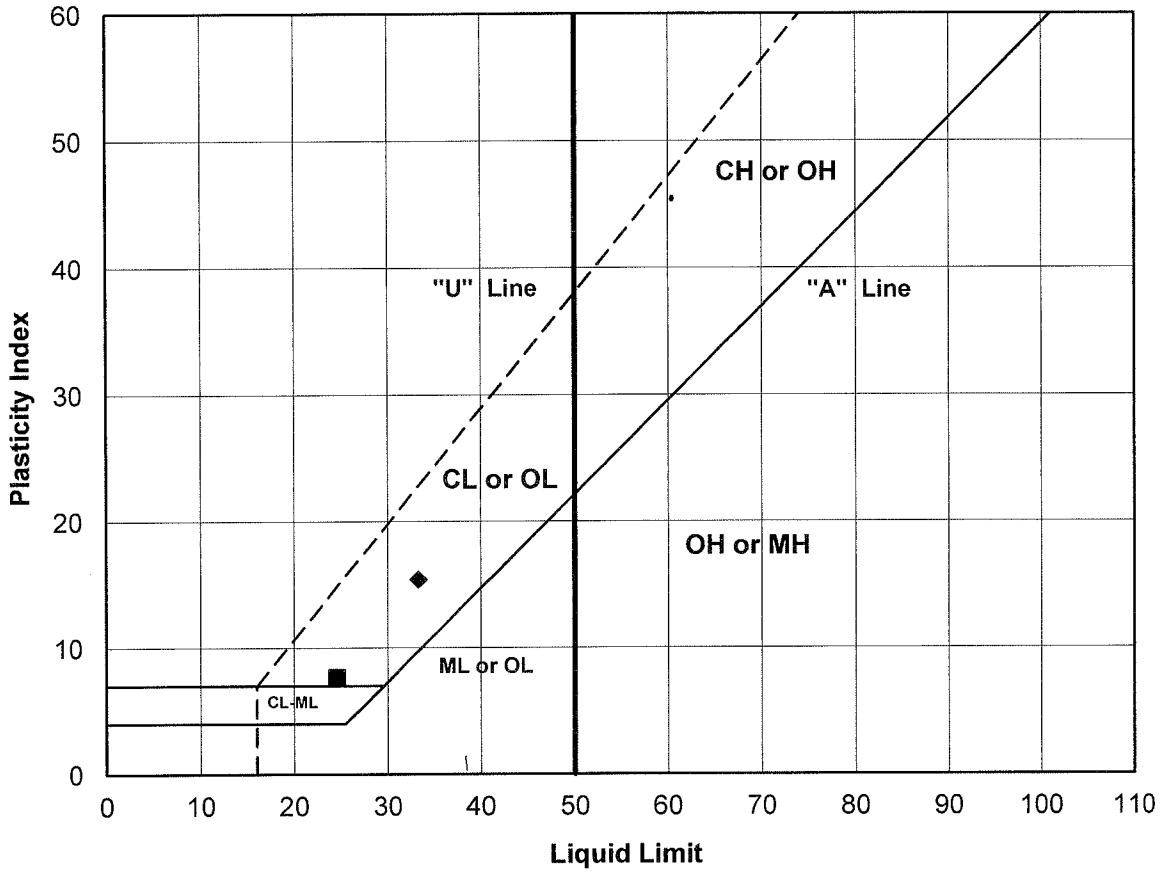
TABLE IV
CORROSION TESTS

Sample	pH	Electrical Resistivity	Sulfate (%)	Chloride (ppm)
B-3 @ 2'	7.2	26,722	0.004	303

% by weight
ppm – mg/kg

PLASTICITY INDEX

ASTM D4318



Symbol	Sample	Depth	LL	PL	PI	USCS	Soil Description
■	B3	15'	25	17	8	CL	Lean Clay
◆	B3	20'	33	18	15	CL	Lean Clay
▲							
□							
◇							
△							

NorCal Engineering

SOILS AND GEOTECHNICAL CONSULTANTS

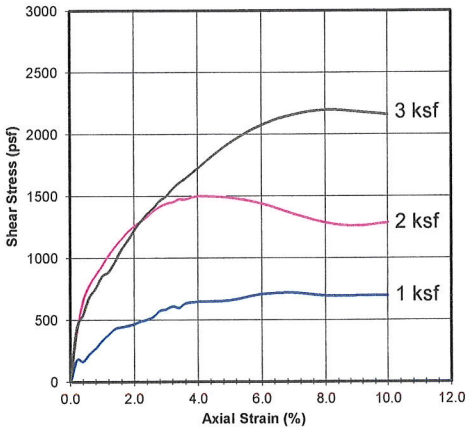
Amir Development Company

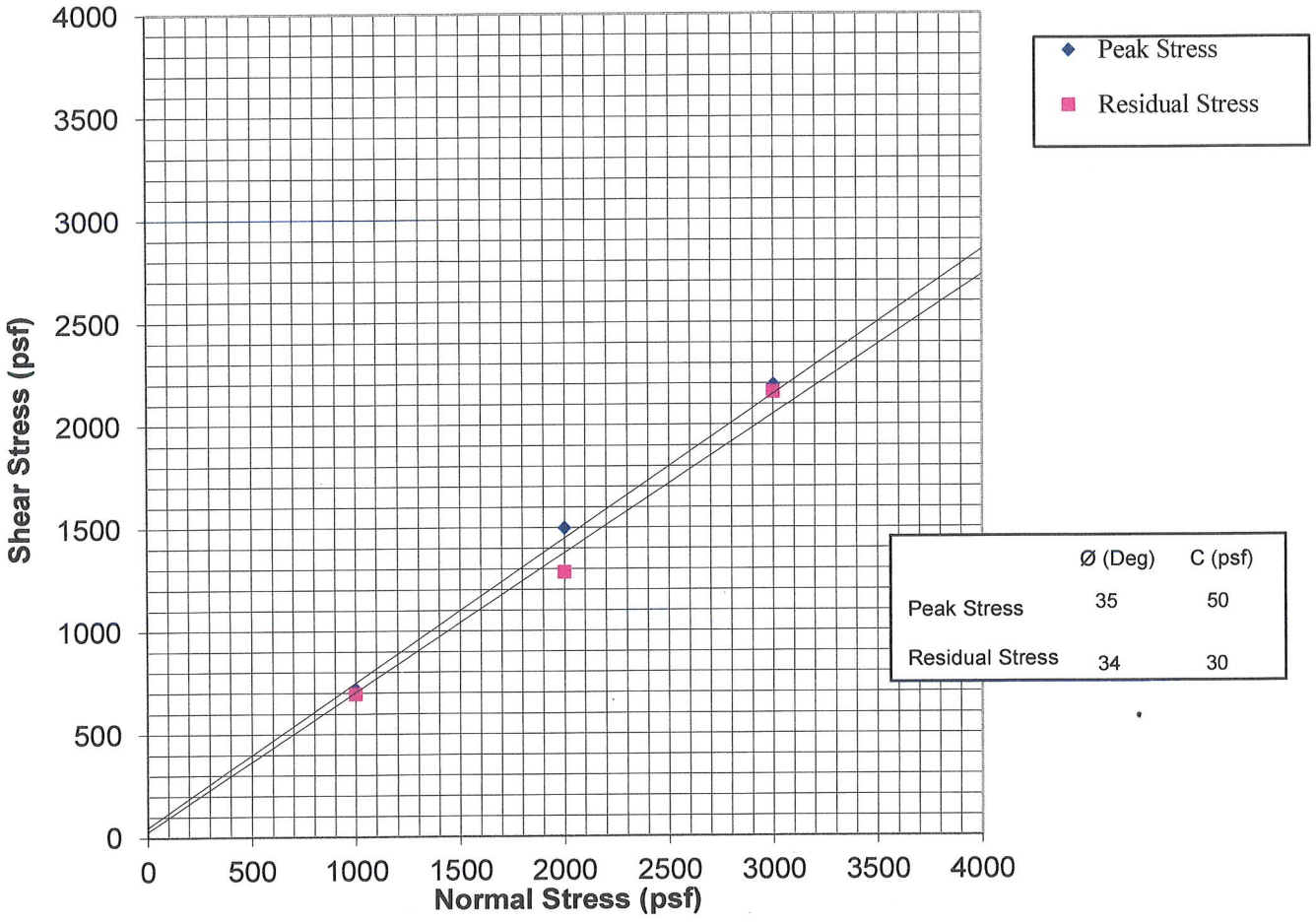
PROJECT NUMBER: 21889-20 DATE: 7/10/2020

PLASTICITY INDEX

ASTM D4318

Sample No.		T2@2'		
Sample Type:		Undisturbed-Saturated		
Soil Description:		Silty Fine-Medium Grained Sand w/ Some Small Gravel		
		1	2	3
Normal Stress	(psf)	1000	2000	3000
Peak Stress	(psf)	720	1500	2196
Displacement	(in.)	0.175	0.100	0.200
Residual Stress	(psf)	696	1284	2160
Displacement	(in.)	0.250	0.250	0.250
Initial Dry Density	(pcf)	100.9	100.9	100.9
Initial Water Content	(%)	7.5	7.5	7.5
Strain Rate	(in./min.)	0.020	0.020	0.020





	Ø (Deg)	C (psf)
Peak Stress	35	50
Residual Stress	34	30

NorCal Engineering

SOILS AND GEOTECHNICAL CONSULTANTS

Amir Development Company

PROJECT NUMBER: 21889-20 DATE: 7/14/2020

DIRECT SHEAR TEST

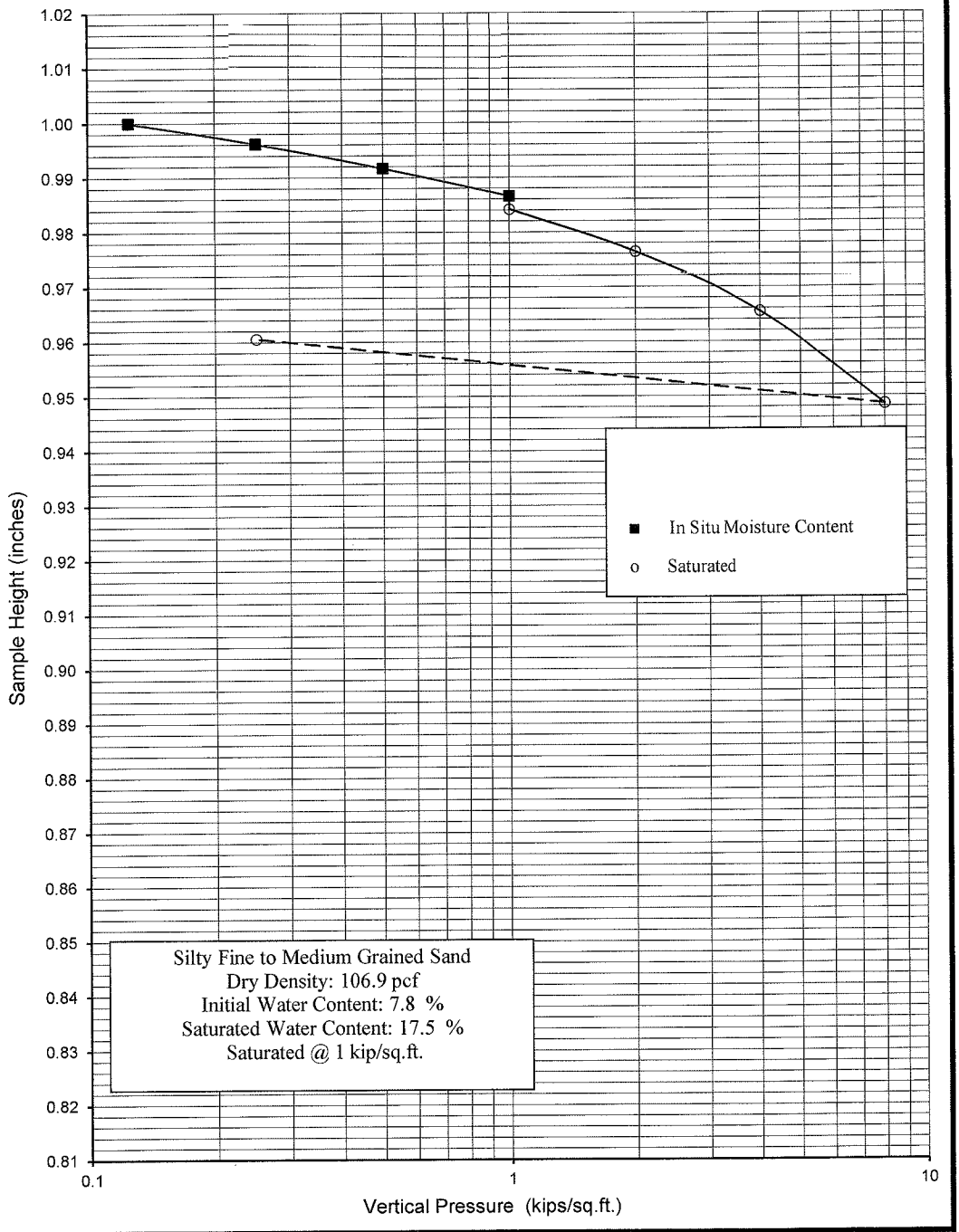
ASTM D3080

Plate A

Vertical Pressure (kips/sq.ft.)	Sample Height (inches)	Consolidation (percent)	Sample No. T2	Depth 5'	Date 7/14/2020
0.125	1.0000	0.0			
0.25	0.9962	0.4			
0.5	0.9917	0.8			
1	0.9866	1.3			
1	0.9842	1.6			
2	0.9764	2.4			
4	0.9655	3.5			
8	0.9485	5.2			
0.25	0.9606	3.9			

Saturated

Date Tested: 7/10/2020
Sample: T2
Depth: 5'



NorCal Engineering

SOILS AND GEOTECHNICAL CONSULTANTS

Amir Development Company

PROJECT NUMBER: 21889-20 DATE: 7/14/2020

CONSOLIDATION TEST

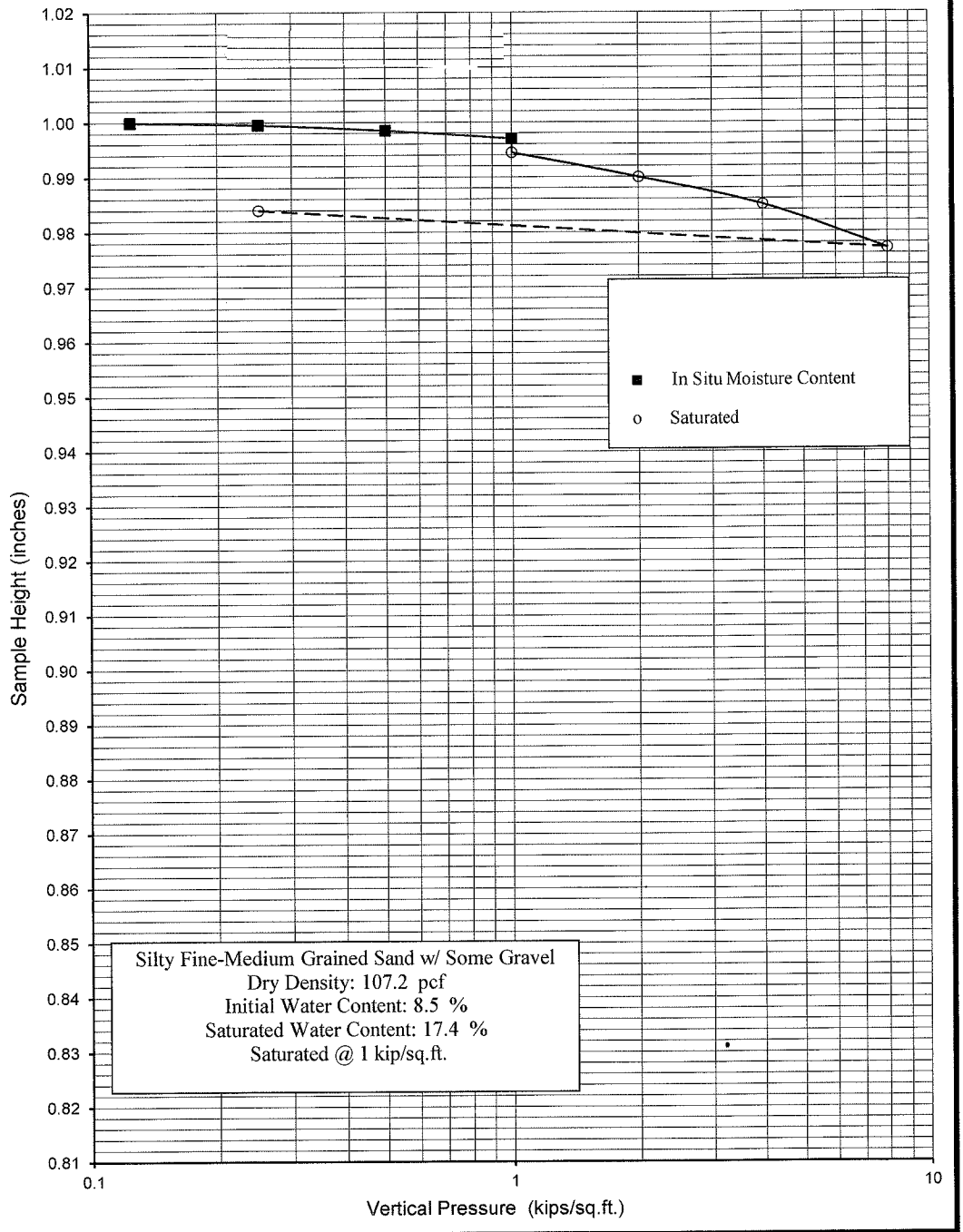
ASTM D2435

Plate B

Vertical Pressure (kips/sq.ft.)	Sample Height (inches)	Consolidation (percent)	Sample No. T2	Depth 10'	Date 7/14/2020
0.125	1.0000	0.0			
0.25	0.9995	0.0			
0.5	0.9985	0.2			
1	0.9970	0.3			
1	0.9945	0.6			
2	0.9900	1.0			
4	0.9850	1.5			
8	0.9770	2.3			
0.25	0.9840	1.6			

Saturated

Date Tested: 7/10/2020
Sample: T2
Depth: 10'



NorCal Engineering

SOILS AND GEOTECHNICAL CONSULTANTS

Amir Development Company

PROJECT NUMBER: 21889-20 DATE: 7/14/2020

CONSOLIDATION TEST

ASTM D2435

Plate C

Appendix C
Liquefaction Analysis

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-22
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 451.22 ft (NAVD 88)
Latitude: 34.279805
Longitude: -118.912343





ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

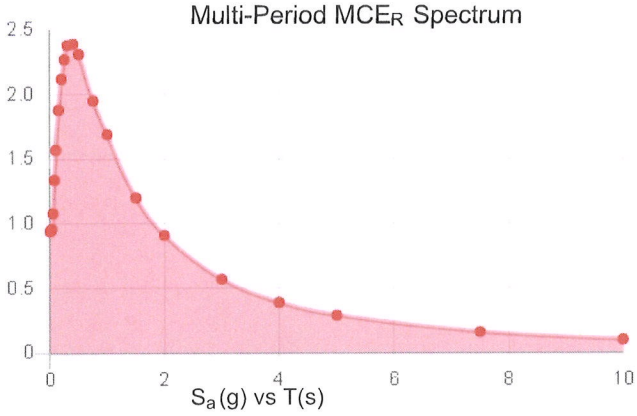
Seismic

Site Soil Class:

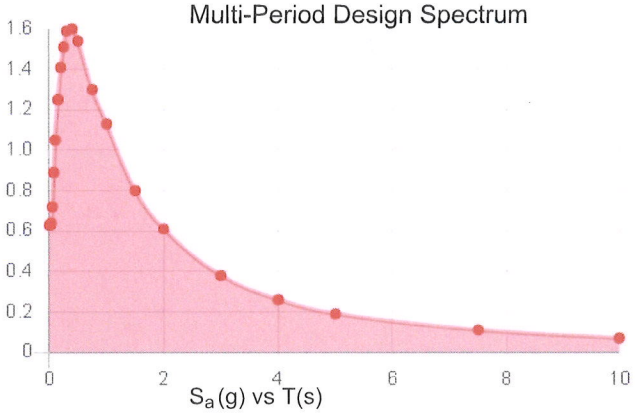
Results:

PGA_M :	0.83	T_L :	8
S_{MS} :	2.15	S_S :	2.1
S_{M1} :	1.69	S_1 :	0.77
S_{DS} :	1.44	S_{DC} :	
S_{D1} :	1.13	V_{S30} :	260

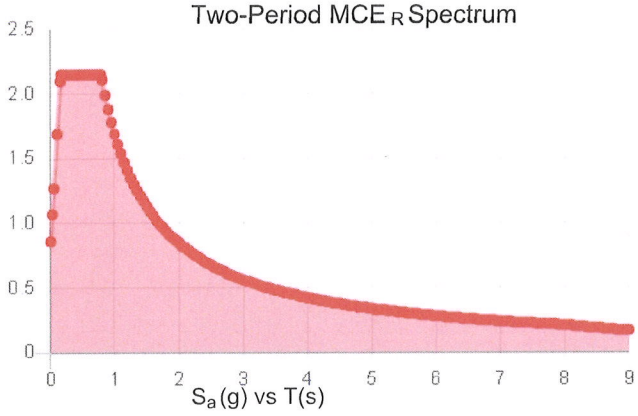
Multi-Period MCE_R Spectrum



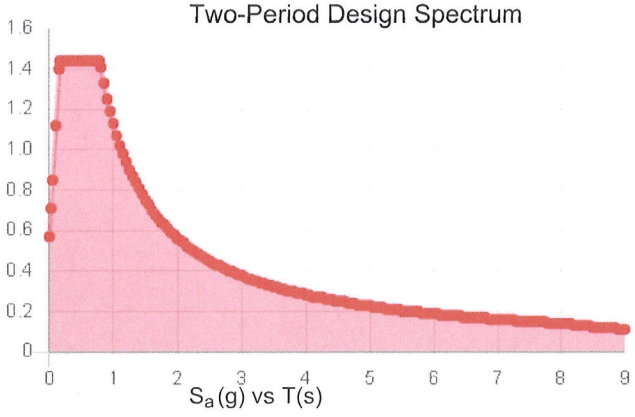
Multi-Period Design Spectrum



Two-Period MCE_R Spectrum



Two-Period Design Spectrum



MCE_R Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

Design Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

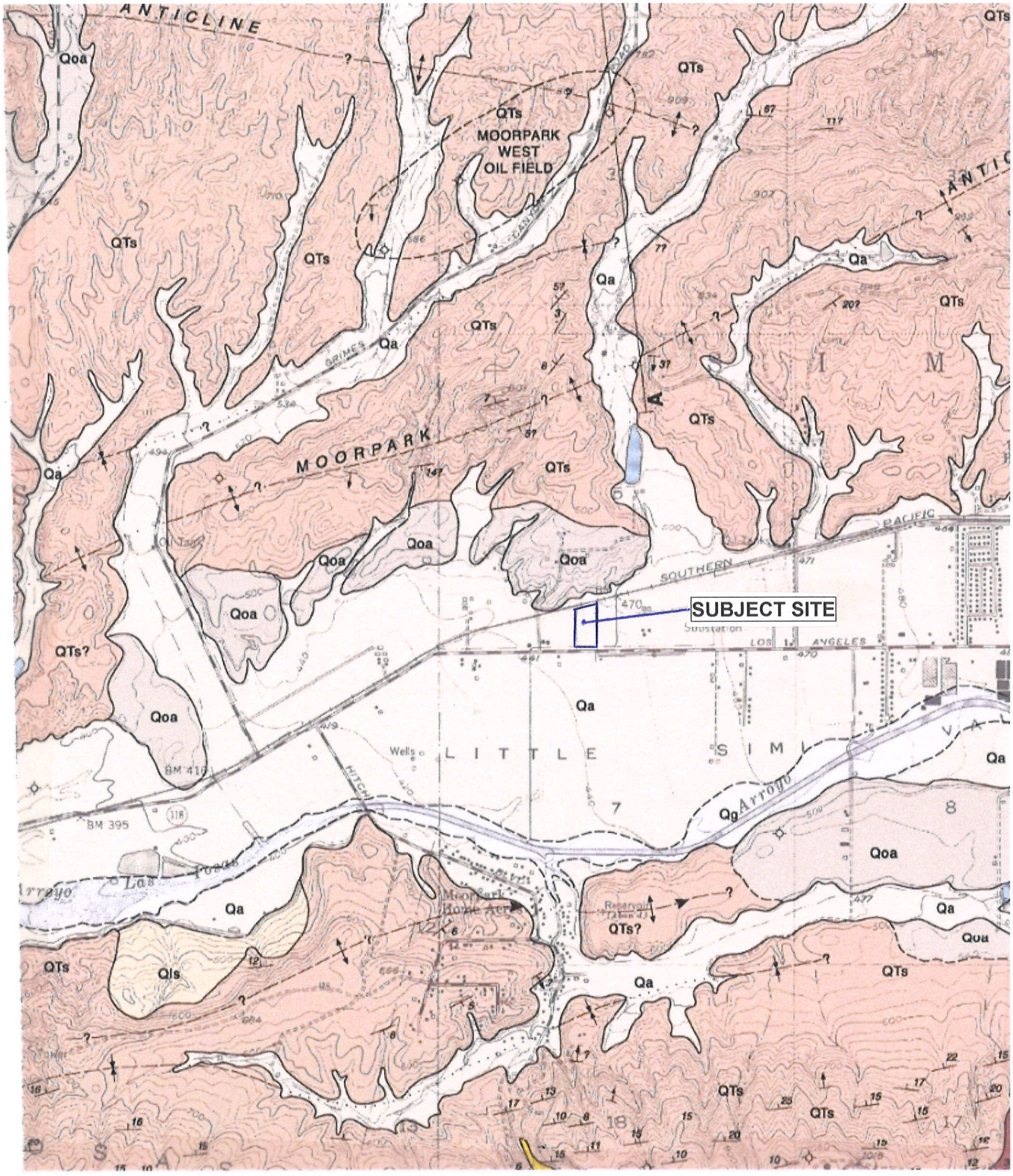
Data Accessed: Tue Mar 29 2022

Date Source:
USGS Seismic Design Maps based on ASCE/SEI 7-22 and ASCE/SEI 7-22 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-22 Ch. 21 are available from USGS.

The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided "as is" and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

ASCE does not intend, nor should anyone interpret, the results provided by this Tool to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the contents of this Tool or the ASCE 7 standard.

In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE 7 Hazard Tool.



NorCal Engineering

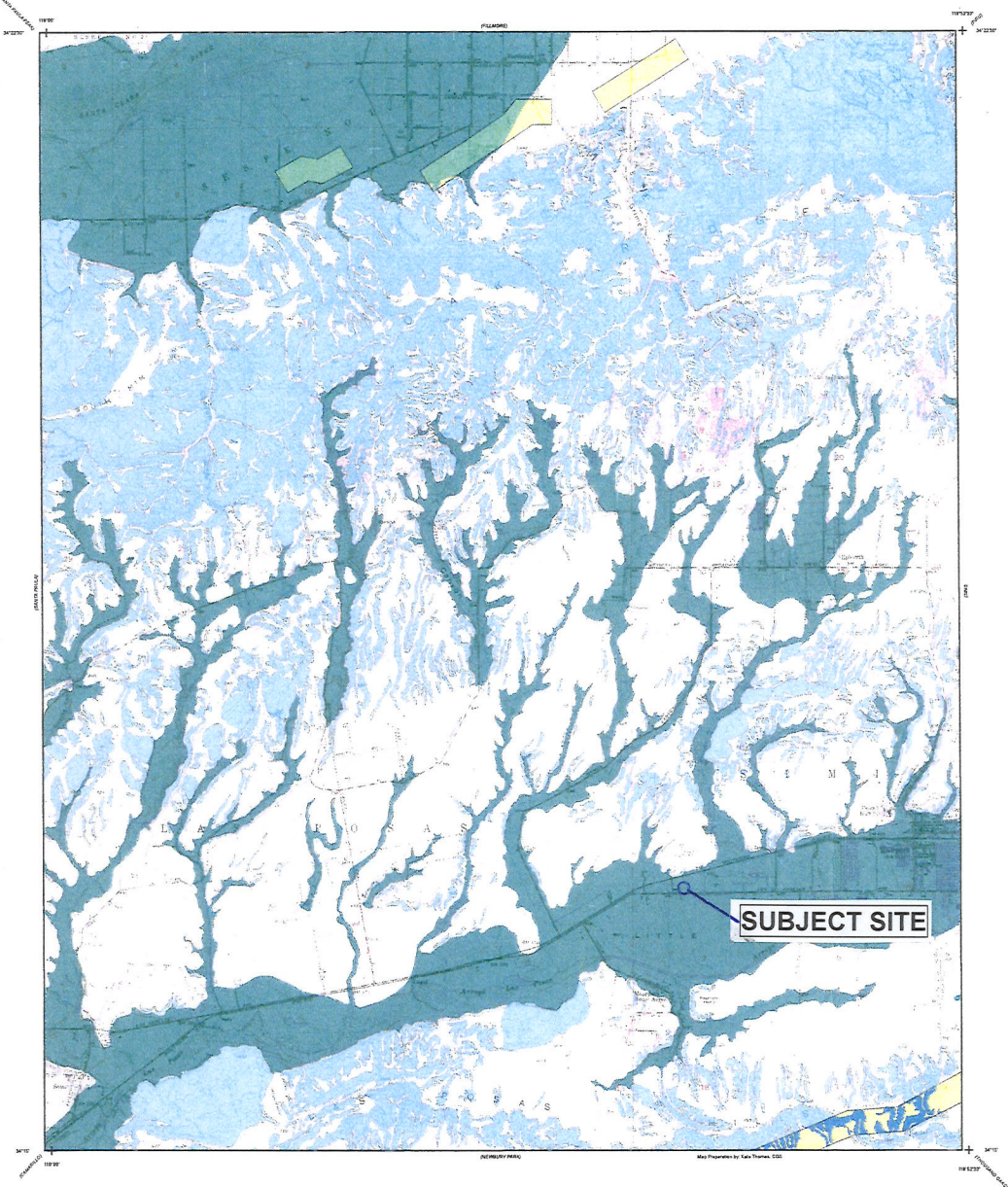
SOILS AND GEOTECHNICAL CONSULTANTS

PROJECT: 21889-20

DATE: MARCH 2022

GEOLOGIC MAP OF THE MOORPARK QUADRANGLE

THOMAS W. DIBBLEE JR. 1992



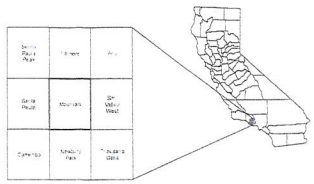
Study area defined by USGS quadrangle boundaries using NAD 27, represented by the visible map extent. Data are maintained and distributed in California Albers (metric), NAD 83, [EPSG:3310] as shown by tics and coordinates.
Shaded topographic relief derived from USGS 10 meter NED, 2013.
Topographic base map from USGS 1969, photorevised, 1974.
Street data from US Census Bureau TIGER/Line, 2016.

Scale 1: 24000

Contour Interval 20 Feet

12°
TRUE NORTH
MAGNETIC NORTH
Approximate Declination, 2013

N



California Geological Survey
Geologic Information and Publications
801 K Street, MS 14-34
Sacramento, CA 95814-3532
www.conservation.ca.gov/cgs

Earthquake Zones of Required Investigation
Moorpark Quadrangle

California Geological Survey

This Map Shows Both Alquist-Priolo Earthquake Fault Zones And Seismic Hazard Zones Issued For The Moorpark Quadrangle

This map shows the location of Alquist-Priolo (AP) Earthquake Fault Zones and Seismic Hazard Zones, collectively referred to here as Earthquake Zones of Required Investigation. The Geographic Information System (GIS) digital files of these regulatory zones released by the California Geological Survey (CGS) are the "Official Maps." GIS files are available at the CGS website http://maps.conservation.ca.gov/cgs/informationwarehouse/eqzones/. These zones will assist cities and counties in fulfilling their responsibilities for protecting the public from the effects of surface fault rupture and earthquake-triggered ground failure as required by the AP Earthquake Fault Zoning Act (Public Resources Code Sections 2621-2630) and the Seismic Hazards Mapping Act (Public Resources Code Sections 2690-2699.6). For information regarding the general approach and recommended methods for preparing these zones, see CGS Special Publication 42, *Earthquake Fault Zones, a Guide for Government Agencies, Property Owners/Developers, and Geoscience Practitioners for Assessing Fault Rupture Hazards in California*, Appendix C, and CGS Special Publication 118, *Recommended Criteria for Delineating Seismic Hazard Zones in California*.

For information regarding the scope and recommended methods to be used in conducting required site investigations refer to CGS Special Publication 42, and CGS Special Publication 117A, *Guidelines for Evaluating and Mitigating Seismic Hazards in California*. For a general description of the AP and Seismic Hazards Mapping acts, the zonation programs, and related information, please refer to the website at www.conservation.ca.ga.gov/cgs/.

MAP EXPLANATION

EARTHQUAKE FAULT ZONES

Earthquake Fault Zones
Zone boundaries are delineated by straight-line segments; the boundaries define the zone encompassing active faults that constitute a potential hazard to structures from surface faulting or fault creep such that avoidance as described in Public Resources Code Section 2621.5(a) would be required.

Active Fault Traces
Faults considered to have been active during Holocene time and to have potential for surface rupture: Solid Line in Black or Red where Accurately Located; Long Dash in Black or Solid Line in Purple where Approximately Located; Short Dash in Black or Solid Line in Orange where Inferred; Dotted Line in Black or Solid Line in Rose where Concealed; Query [?] indicates additional uncertainty. Evidence of historic offset indicated by year of earthquake-associated event or C for displacement caused by fault creep.

SEISMIC HAZARD ZONES

Liquefaction Zones
Areas where historical occurrence of liquefaction, or local geological, geotechnical and ground water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

Earthquake-Induced Landslide Zones
Areas where previous occurrence of landslide movement, or local topographic, geological, geotechnical and subsurface water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

OVERLAPPING EARTHQUAKE FAULT AND SEISMIC HAZARD ZONES

Overlap of Earthquake Fault Zone and Liquefaction Zone
Areas that are covered by both Earthquake Fault Zone and Liquefaction Zone.

Overlap of Earthquake Fault Zone and Earthquake-Induced Landslide Zone
Areas that are covered by both Earthquake Fault Zone and Earthquake-Induced Landslide Zone.

Note: Mitigation methods differ for each zone – AP Act only allows avoidance; Seismic Hazard Mapping Act allows mitigation by engineering/geotechnical design as well as avoidance.

ADDITIONAL INFORMATION

For additional information on the zones of required investigation presented on this map, the data and methodology used to prepare them, and additional references consulted, please refer to the following:

The Simi-Santa Rosa Fault Zone, in the Moorpark, Newbury Park, Simi Valley East, Simi Valley West, and Thousand Oaks Quadrangles, Ventura County, California. California Geological Survey, Fault Evaluation Report FER-244.
http://gmw.conservation.ca.gov/SHP/EZRIM/Reports/FER/244/

The Oak Ridge and Related Faults Vicinity of Fillmore and Santa Paula, in the Moorpark Quadrangle, Ventura County, California. California Geological Survey, Fault Evaluation Report FER-219.
http://gmw.conservation.ca.gov/SHP/EZRIM/Reports/FER/219/

For more information on the Alquist-Priolo Earthquake Fault Zoning Act please refer to
http://www.conservation.ca.gov/cgs/rgm/ap/Pages/main.aspx

Seismic Hazard Zone Report for the Moorpark 7.5-minute Quadrangle, Ventura County, California. California Geological Survey, Seismic Hazard Zone Report 041.
http://gmw.conservation.ca.gov/SHP/EZRIM/Reports/SHZR/SHZR_041_Moorpark.pdf

For more information on the Seismic Hazards Mapping Act please refer to
http://www.conservation.ca.gov/cgs/shzp/Pages/SHZPprogram.aspx

Click the link below to learn how to take greater advantage of the GeoPDF format of this map after downloading.
http://gmw.conservation.ca.gov/SHP/EZRIM/Documents/MapGuideUserGuide.pdf

MOORPARK QUADRANGLE

EARTHQUAKE FAULT ZONES

Delineated in compliance with Chapter 7.5 Division 2 of the California Public Resources Code *(Alquist-Priolo Earthquake Fault Zoning Act)*

REVISED OFFICIAL MAP

Released: May 1, 1999

STATE GEOLOGIST

SEISMIC HAZARD ZONES

Delineated in compliance with Chapter 7.8 Division 2 of the California Public Resources Code *(Seismic Hazards Mapping Act)*

OFFICIAL MAP

Released: November 17, 2000

STATE GEOLOGIST

IMPORTANT

PLEASE NOTE THE FOLLOWING FOR ZONES SHOWN ON THIS MAP

1) This map may not show all faults that have the potential for surface fault rupture, either within the Earthquake Fault Zones or outside their boundaries. Additionally, this map may not show all areas that have the potential for liquefaction, landsliding, strong earthquake ground shaking or other earthquake and geologic hazards. Also, a single earthquake capable of causing liquefaction or triggering landslide failure will not uniformly affect the entire area zoned.

2) Boundaries of Earthquake Fault Zones, if included on this map, are based on interpreted Holocene-active fault traces.

3) The identification and location of these faults are based on the best available data. However, the quality of data used is varied. Traces have been depicted as accurately as possible at a map scale of 1:24,000.

4) Liquefaction zones may also contain areas susceptible to the effects of earthquake-induced landslides. This situation typically exists at or near the toes of existing landslides, downslope from rockfall or debris flow source areas, or adjacent to steep stream banks.

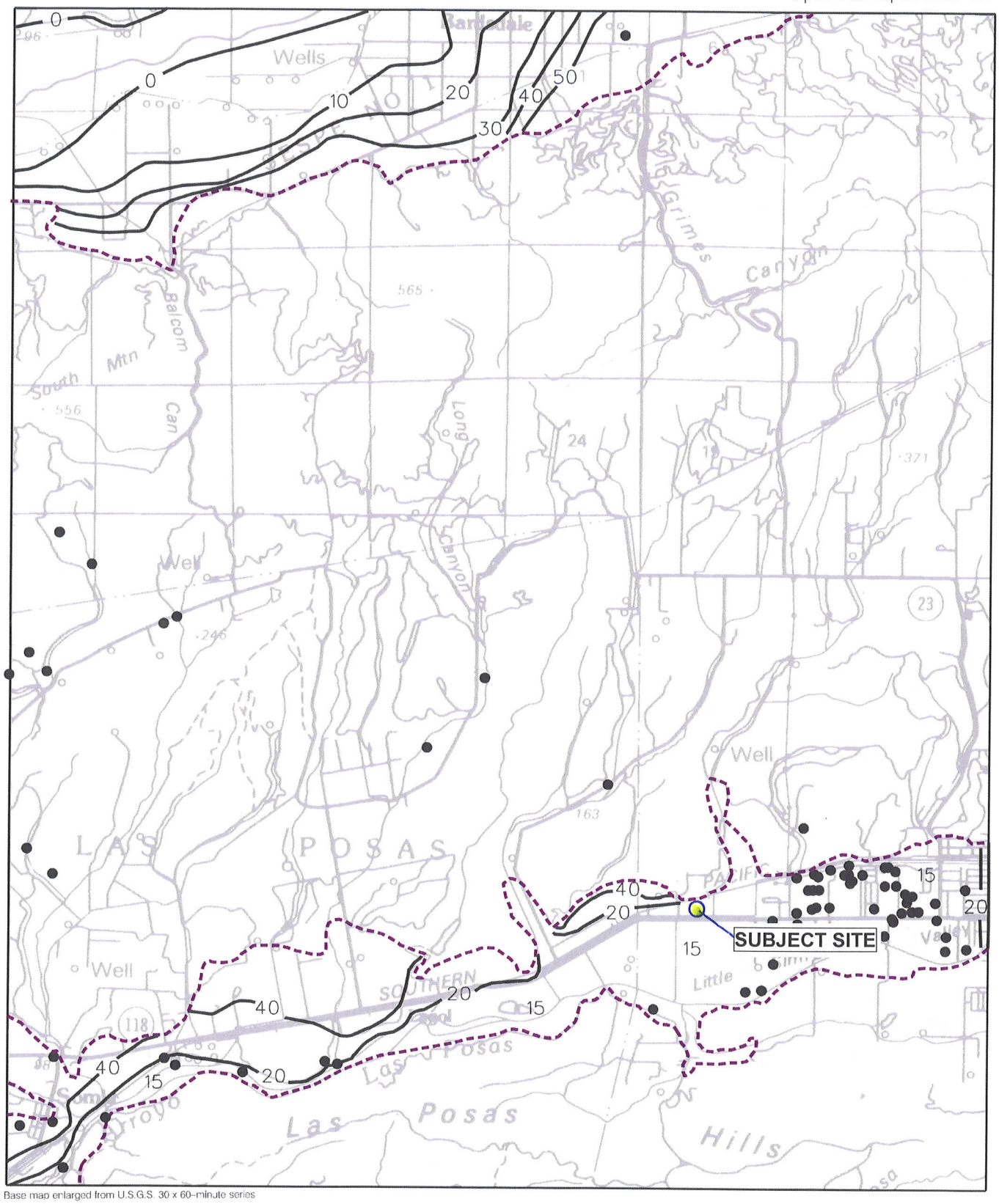
5) Landslide zones on this map were determined, in part, by adapting methods first developed by the U.S. Geological Survey (USGS). Landslide zones are based on maps prepared by the USGS typically use experimental approaches to assess earthquake-induced landslides and other types of landslide hazards. Although aspects of these new methodologies may be incorporated in future CGS seismic hazard zone maps, USGS maps should not be used as substitutes for these Official SEISMIC HAZARD ZONES maps.

6) USGS base map standards provide that 90 percent of cultural features be located within 40 feet (horizontal accuracy) at the scale of this map. The identification and location of liquefaction and earthquake-induced landslide zones are based on available data. However, the quality of data used is varied. The zone boundaries depicted have been drawn as accurately as possible at this scale.

7) Information on this map is not sufficient to serve as a substitute for the geologic and geotechnical site investigations required under Chapters 7.5 and 7.8 of Division 2 of the California Public Resources Code.

8) Seismic Hazard Zones identified on this map may include developed land where delineated hazards have already been mitigated to city or county standards. Check with your local building/planning department for information regarding the location of such mitigated areas.

9) DISCLAIMER: The State of California and the Department of Conservation make no representations or warranties regarding the accuracy of the data from which these maps were derived. Neither the State nor the Department shall be liable under any circumstances for any direct, indirect, special, incidental or consequential damages with respect to any claim by any user or any third party on account of or arising from the use of this map.



Base map enlarged from U.S.G.S. 30 x 60–minute series

Plate 1.2 Historically shallow ground–water depths and borehole data points in alluviated valley areas of the Moorpark Quadrangle.

Alluviated Valley

20 Historically shallow ground–water depth contours (in feet)

Borehole Site

15 Historically shallow ground–water depth where same value occurs over a broad area (in feet)

ONE MILE

Scale

SITE LOCATION: _____

GEOTECHNICAL REPORT: _____

GEOLOGY REPORT: _____

DEPTH TO WATER TABLE = 20'

EARTHQUAKE MAGNITUDE = 6.7

PEAK GROUND ACCELERATION = 0.87g

DEPTH BELOW FINAL GRADE (FEET)	MOIST DENSITY (PCF)	σ_o TOTAL STRESS (PSF)	$\bar{\sigma}_o$ EFFECTIVE STRESS (PSF)	$\sigma_o/\bar{\sigma}_o$ (-)	r_d (-)	① $\tau_h/\bar{\sigma}_o$ (-)	N VALUE (BLOWS/FT)	RELATIVE DENSITY (%)	C_N (-)	C_E (-)	C_B (-)	C_R (-)	C_S (-)	$(N_1)_{60}$ (BLOWS/FT)	FINES (%)	CRR M=7.5	MSF (-)	CRR M=7.0	LIQ. F.S.
5	110	550	Same	1.00	0.99	0.57	7	60	>1.6	1.00	1.05	0.70	1.20	>10	15	>0.16	1.5	>0.24	>0.5
10	115	1125			0.96	0.55	9	60	1.3			0.75		11	31	0.20		0.30	0.5
15	120	1725			0.92	0.53	4	40	1.1			0.85		5	61	>0.13		>0.20	>0.4
20	125	2350			0.87	0.50	10	55	0.92			0.90		10.5	66	>0.19		>0.30	>0.6
25		2975	2663	1.12	0.80	0.51	16	65	0.88			0.95		17	8	0.20		0.30	0.6
30		3600	2976	1.21	0.74	0.51	12	55	0.85			1.00		13	66	>0.22		>0.33	>0.6
35		4225	3289	1.28	0.68	0.50	21	65	0.81					21.5	4	0.24		0.36	0.7
40		4850	3602	1.35	0.64	0.49	21	65	0.78					20.5	4	0.22		0.33	0.7
45		5475	3915	1.40	0.61	0.49	32	75	0.76					30.5	7	>0.50		>0.75	>1.5
50		6100	4228	1.44	0.58	0.48	30	70	0.73					28	8	0.45		0.68	1.4

① INDUCED CYCLIC STRESS RATIO = $\tau_{ave}/\bar{\sigma}_o = 0.65 \cdot \frac{a_{max}}{g} \cdot \frac{\sigma_o}{\bar{\sigma}_o} \cdot r_d$

- C_E = Corr. - Energy Ratio = Energy Ratio/60%
- C_B = Corr. - Borehole Dia. = 1.15 for 8" dia. borehole
- C_R = Corr. - Rod Length
- C_S = Corr. - Sampling Method

Actual Energy Ratio = 0.67-1.17 (Safety Hammer)
= 0.50-1.00 (Donut Hammer)

Sampling Method = 1.0 Standard sampler
= ~~1.2 Sampler W/o liners~~

NorCal Engineering
SOILS AND GEOTECHNICAL CONSULTANTS

PROJECT 21889-20 | DATE JULY, 2020

EVALUATION OF LIQUEFACTION POTENTIAL

SEISMIC SETTLEMENT EVALUATION ⇒ GWT @ 20'

EQ Magnitude = 6.7, Hor. Ground Acceleration = 0.87 g

Depth (ft)	$N_{1,60}$ (Blows/ft)	Fines (%)	EQ CSR	M_{design} $M_{7.5}$	Design CSR	Vert. Strain	Seismic Settle	Liquefaction F.S.
				1.5				
20-25'	17	8	0.51		0.34	1.7%	1.0"	0.6
25-30'	13 (20)	66 (5)	0.51		0.34	1.5%	0.9"	>0.6
30-35'	21.5	4	0.50		0.33	1.4%	0.8"	0.7
35-40	20.5	4	0.49		0.32	1.5%	0.9"	0.7

$\Sigma S = 3.6"$

Say $\Delta_{EQ} = 3\frac{1}{2}"$

NorCal Engineering
SOILS AND GEOTECHNICAL CONSULTANTS

20332-18 | DATE

Appendix D
Soil Infiltration Testing

NORCAL ENGINEERING

SOILS AND GEOTECHNICAL CONSULTANTS

PERCOLATION TEST DATA

Client: Amir Development Company	**Date:** 3/25/2022
Project No.: 21889-20	**Tested By:** J.S.
Test Hole: 1	**USCS Soil Classification:**
Depth of Test Hole: 11'	**Sides (if rectangular):**
Diameter of Test Hole: 6"	**Length:**
Sandy Soil Criteria Test*:	**Width:**

TRIAL NO.	START TIME	STOP TIME	TIME INTERVAL (MIN)	INITIAL DEPTH TO WATER (IN)	FINAL DEPTH TO WATER (IN)	CHANGE IN WATER LEVEL (IN)	GREATER THAN OR EQUAL TO 6"
1	10:00	10:23	23	114.0	132.0	18.0	
2	10:23	10:47	24	115.0	132.0	17.0	

*If two consecutive measurements show that six inches of water seeps away in less than 25 minutes, the test shall be run for an additional hour with measurements taken every 10 minutes. Otherwise, pre-soak (fill) overnight. Obtain at least twelve measurements per hole over at least six hours (approximately 30-minute intervals) with a precision of at least 0.25".

TRIAL NO	START TIME	STOP TIME	ΔT TIME INTERVAL (MIN)	Do INITIAL DEPTH TO WATER (IN)	Df FINAL DEPTH TO WATER (IN)	ΔD CHANGE IN WATER LEVEL (IN)	PERCOLATION RATE (MIN/IN)
1	10:47	10:57	10	117.0	117.5	4.5	
2	10:57	11:07	10	117.0	122.0	5.0	
3	11:07	11:17	10	112.0	117.0	5.0	
4	11:17	11:27	10	115.0	120.0	5.0	
5	11:27	11:37	10	117.0	122.5	4.5	
6	11:37	11:47	10	115.0	120.0	5.0	
7							
8							
9							
10							
11							
12							
13							
14							
15							
COMMENTS:							

NORCAL ENGINEERING

SOILS AND GEOTECHNICAL CONSULTANTS

PERCOLATION TEST DATA

Client: Amir Development Company	**Date:** 3/25/2022
Project No.: 21889-20	**Tested By:** J.S.
Test Hole: 2	**USCS Soil Classification:**
Depth of Test Hole: 11.5'	**Sides (if rectangular):**
Diameter of Test Hole: 6"	**Length:**
Sandy Soil Criteria Test*:	**Width:**

TRIAL NO.	START TIME	STOP TIME	TIME INTERVAL (MIN)	INITIAL DEPTH TO WATER (IN)	FINAL DEPTH TO WATER (IN)	CHANGE IN WATER LEVEL (IN)	GREATER THAN OR EQUAL TO 6"
1	10:03	10:16	13	122.0	138.0	16.0	
2	10:16	10:37	21	120.0	138.0	18.0	

*If two consecutive measurements show that six inches of water seeps away in less than 25 minutes, the test shall be run for an additional hour with measurements taken every 10 minutes. Otherwise, pre-soak (fill) overnight. Obtain at least twelve measurements per hole over at least six hours (approximately 30-minute intervals) with a precision of at least 0.25".

TRIAL NO	START TIME	STOP TIME	ΔT TIME INTERVAL (MIN)	Do INITIAL DEPTH TO WATER (IN)	Df FINAL DEPTH TO WATER (IN)	ΔD CHANGE IN WATER LEVEL (IN)	PERCOLATION RATE (MIN/IN)
1	10:37	10:47	10	123.0	133.0	10.0	
2	10:47	10:57	10	121.0	131.0	10.0	
3	10:57	11:07	10	115.0	124.5	9.5	
4	11:07	11:17	10	115.0	125.0	10.0	
5	11:17	11:27	10	118.0	117.5	9.5	
6	11:27	11:37	10	123.0	132.0	9.0	
7							
8							
9							
10							
11							
12							
13							
14							
15							
COMMENTS:							

NORCAL ENGINEERING
SOILS AND GEOTECHNICAL CONSULTANTS

PERCOLATION TEST DATA

Client: Amir Development Company	**Tested By:** J.S. Jr.
Project No.: 21889-20	**Date Tested:** 6/25/2020
Test Hole: 1	**Caving:**
Depth of Test Hole: 5'	**Notes:**
Diameter of Test Hole: 6"	
Date Excavated: 6/25/2020	

PRE-SOAK

TIME	PRE-SOAK NO.	TIME INTERVAL	TOTAL ELAPSED TIME	INITIAL WATER LEVEL	FINAL WATER LEVEL	CHANGE IN WATER LEVEL
7:48	1	2	2	38.0	50.0	12.0
7:50						
7:50	2	3	5	38.0	50.0	12.0
7:53						

PERCOLATION TEST

TIME	PRE-SOAK NO.	TIME INTERVAL	TOTAL ELAPSED TIME	INITIAL WATER LEVEL	FINAL WATER LEVEL	CHANGE IN WATER LEVEL
7:53	1	5	5	38.0	50.0	12.0
7:58						
7:58	2	5	10	38.0	50.0	12.0
8:03						
8:03	3	6	16	38.0	50.0	12.0
8:09						
8:09	4	6	22	38.0	50.0	12.0
8:15						
8:15	5	7	29	38.0	50.0	12.0
8:22						
8:22	6	8	37	38.0	50.0	12.0
8:30						
8:30	7	7	44	38.0	50.0	12.0
8:37						
8:37	8	7	51	38.0	50.0	12.0
8:44						

Copyright 2013 M. Barone

NORCAL ENGINEERING
SOILS AND GEOTECHNICAL CONSULTANTS

PERCOLATION TEST DATA

Client: Amir Development Company	**Tested By:** J.S. Jr.
Project No.: 21889-20	**Date Tested:** 6/25/2020
Test Hole: 1	**Caving:**
Depth of Test Hole: 5'	**Notes:**
Diameter of Test Hole: 6"	
Date Excavated: 6/25/2020	

PRE-SOAK

TIME	PRE-SOAK NO.	TIME INTERVAL	TOTAL ELAPSED TIME	INITIAL WATER LEVEL	FINAL WATER LEVEL	CHANGE IN WATER LEVEL

PERCOLATION TEST

TIME	PRE-SOAK NO.	TIME INTERVAL	TOTAL ELAPSED TIME	INITIAL WATER LEVEL	FINAL WATER LEVEL	CHANGE IN WATER LEVEL
8:44	9	8	59	48.0	60.0	12.0
8:52						
8:52	10	7	66	48.0	60.0	12.0
8:59						
8:59	11	8	74	48.0	60.0	12.0
9:07						
9:07	12	9	83	48.0	60.0	12.0
9:16						
9:16	13	8	91	48.0	60.0	12.0
9:24						
9:24	14	9	100	48.0	60.0	12.0
9:33						
9:33	15	10	110	48.0	60.0	12.0
9:43						
9:43	16	10	120	48.0	60.0	12.0
9:53						

NORCAL ENGINEERING
SOILS AND GEOTECHNICAL CONSULTANTS

Client: Amir Development Company	**Tested By:** J.S. Jr.
Project No.: 21889-20	**Date Tested:** 6/25/2020
Test Hole: 2	**Caving:**
Depth of Test Hole: 10'	**Notes:**
Diameter of Test Hole: 6"	
Date Excavated: 6/25/2020	

PRE-SOAK

TIME	PRE-SOAK NO.	TIME INTERVAL	TOTAL ELAPSED TIME	INITIAL WATER LEVEL	FINAL WATER LEVEL	CHANGE IN WATER LEVEL
8:10	1	5	5	108.0	120.0	12.0
8:15						
8:15	2	7	12	107.0	120.0	13.0
8:22						

PERCOLATION TEST

TIME	PRE-SOAK NO.	TIME INTERVAL	TOTAL ELAPSED TIME	INITIAL WATER LEVEL	FINAL WATER LEVEL	CHANGE IN WATER LEVEL
8:22	1	8	8	107.0	120.0	13.0
8:30						
8:30	2	9	17	107.0	120.0	13.0
8:39						
8:39	3	9	26	107.0	120.0	13.0
8:48						
8:48	4	8	34	108.0	120.0	12.0
8:56						
8:56	5	8	42	108.0	120.0	12.0
9:04						
9:04	6	10	52	107.0	120.0	12.0
9:14						
9:14	7	10	62	107.0	118.0	11.0
9:24						
9:24	8	10	72	108.0	119.0	11.0
9:34						

Copyright 2013 M. Barone

PERCOLATION TEST DATA

NORCAL ENGINEERING
SOILS AND GEOTECHNICAL CONSULTANTS

Client: Amir Development Company	**Tested By:** J.S. Jr.
Project No.: 21889-20	**Date Tested:** 6/25/2020
Test Hole: 2	**Caving:**
Depth of Test Hole: 10'	**Notes:**
Diameter of Test Hole: 6"	
Date Excavated: 6/25/2020	

PRE-SOAK

TIME	PRE-SOAK NO.	TIME INTERVAL	TOTAL ELAPSED TIME	INITIAL WATER LEVEL	FINAL WATER LEVEL	CHANGE IN WATER LEVEL

PERCOLATION TEST

TIME	PRE-SOAK NO.	TIME INTERVAL	TOTAL ELAPSED TIME	INITIAL WATER LEVEL	FINAL WATER LEVEL	CHANGE IN WATER LEVEL
9:34	9	10	82	108.0	119.0	11.0
9:44						
9:44	10	10	92	108.0	118.0	10.0
9:54						
9:54	11	10	102	107.0	118.0	11.0
10:04						
10:04	12	10	112	108.0	119.0	11.0
10:14						
10:14	13	10	122	107.0	117.0	10.0
10:24						

Copyright 2013 M. Barone

SOIL INFILTRATION RATE CALCS ⇒ Auger Boring

Location:	TH-1	TH-2
• Depth =	5.0'	10.0'
• Hole Dia. =	6"	6"
• Drop = Δd	12"	10"
• Time = Δt Interval	10 min	10 min
• Preadjusted Perc. Rate	72 in/hr	60 in/hr
• Initial Water Depth = d_1	12"	13"
• Reduction Factor = R_f	3.0	3.7
• INFILTRATION RATE	24 in/hr	16.4 in/hr

$$\text{Infiltration Rate} = \frac{\text{Pre adjusted Perc. Rate}}{\text{Reduction Factor}}$$

$$\text{Reduction Factor} = R_f = \left[\frac{2 \cdot d_1 - \Delta d}{\text{Dia.}}\right] + 1$$

NorCal Engineering
SOILS AND GEOTECHNICAL CONSULTANTS

JOB NO. 21889-20 DATE JULY, 2020

SOIL INFILTRATION RATE CALCS ⇒ Auger Boring

Location:	B-3	B-4
• Depth =	11.0'	11.5"
• Hole Dia. =	6"	6"
• Drop = Δd	5"	9.5"
• Time = Δt Interval	10 min	10 min
• Preadjusted Perc. Rate	30 in/hr	57 in/hr
• Initial Water depth = d_i	20"	20"
• Reduction Factor = R_f	6.83	6.08
• INFILTRATION RATE	4.4 in/hr	9.4 in/hr

$$\text{Infiltration Rate} = \frac{\text{Preadjusted Perc. Rate}}{\text{Reduction Factor}}$$

$$\text{Reduction Factor} = R_f = \left[\frac{2 \cdot d_i - \Delta d}{\text{Dia.}}\right] + 1$$

NorCal Engineering
SOILS AND GEOTECHNICAL CONSULTANTS

DATE

SOIL INFILTRATION RATE CALCULATIONS

PENTAIR PROJECT
Revised Traffic and Circulation Study

City of Moorpark, CA

April 6, 2022

P.N. 2042614102

Prepared By:

Stantec

111 E. Victoria Street
Santa Barbara, CA 93101
Phone: (805) 963-9532

TABLE OF CONTENTS

Introduction **1**
Project Description **1**
Study Methodology **1**
Traffic Analysis Scenarios 1
Level of Service Criteria 1
Level of Service Calculation Methodology 4
Existing Conditions **4**
Roadway Network 4
Alternative Transportation 5
Existing Intersection Operations 5
Traffic Signal Warrant Analysis 6
Project Specific Conditions **9**
Traffic Impact Thresholds 9
Project Trip Generation 9
Project Trip Distribution 10
Existing plus Project Intersection Operations 10
Traffic Signal Warrant Analysis 13
Cumulative Conditions **13**
Cumulative Projects Trip Generation and Distribution 14
Cumulative plus Project Intersection Operations 14
Traffic Signal Warrant Analysis 17
Project Site Access, Circulation **17**
Project Site Access 17
Circulation 18
Mitigation Measures **19**
Project Specific Mitigations 19
Cumulative Mitigations 20

LIST OF TABLES

Table 1: Intersection Level of Service Criteria 4
Table 2: Existing AM and PM Peak Hour Intersection Levels of Service 6
Table 3: Project Trip Generation 9
Table 4: Existing + Project AM Peak Hour Intersection Levels of Service 10
Table 5: Existing + Project PM Peak Hour Intersection Levels of Service 13
Table 6: Cumulative + Project AM Peak Hour Intersection Levels of Service 14
Table 7: Cumulative + Project PM Peak Hour Intersection Levels of Service 17
Table 8: Los Angeles Ave/Montair Dr Intersection Mitigated AM and PM Peak Hour Levels of Service 20

TABLE OF EXHIBITS

Exhibit 1: Existing Roadway Network and Project Location 2
Exhibit 2: Project Site Plan 3
Exhibit 3: Existing Conditions - Intersection Geometries 7
Exhibit 4: Existing Conditions - Traffic Volumes 8
Exhibit 5: Project-Added Traffic Volumes 11
Exhibit 6: Existing + Project Conditions – Traffic Volumes 12
Exhibit 7: Cumulative Conditions - Traffic Volumes 15
Exhibit 8: Cumulative + Project Conditions - Traffic Volumes 16

TECHNICAL APPENDIX

Appendix 1 – AM and PM Peak Hour Intersection Counts
Appendix 2 – Intersection Level of Service Calculation Worksheets
Appendix 3 – Traffic Signal Warrant Worksheets

INTRODUCTION

Stantec has prepared the following revised traffic and circulation study for the Pentair Warehouse Project. The traffic and circulation study provides an assessment of the existing and future traffic conditions within the study area, determines the trip generation and trip distribution for the proposed development, evaluates the potential traffic impacts to the vicinity roadways and intersections, and provides feasible mitigations where applicable. A discussion of the site access and circulation plan and parking is also provided. The revised study incorporates comments provided by the City of Moorpark and Caltrans on the draft study submitted on November 4, 2021. A detailed vehicle miles traveled (VMT) analysis is provided in a separate document.

PROJECT DESCRIPTION

The project is located on APN 511-0-200-265 east of the existing Pentair site and north of Los Angeles Avenue (State Route 118) in the City of Moorpark. The project consists of the construction of a 90,566 square feet industrial building. Based on the project statistics, 4,000 SF would be office space and 86,566 SF would be warehouse. Exhibit 1 shows the location of the project site in the City of Moorpark and Exhibit 2 illustrates the site plan.

Access is proposed via the existing intersection of Los Angeles Avenue and Montair Drive and one new driveway connection on the north side of Los Angeles Avenue. The new driveway on Los Angeles Avenue will be restricted to emergency access only.

STUDY METHODOLOGY

Traffic Analysis Scenarios

Pursuant to City traffic requirements, the traffic analysis includes the following traffic scenarios:

- Existing Conditions
- Existing plus Project Conditions
- Cumulative Conditions
- Cumulative plus Project Conditions

Level of Service Criteria

The traffic analysis focuses on key intersections within the study area during the AM and PM commute periods, when peak traffic volumes typically occur. A level of service (LOS) ranking scale is used to identify the operating condition at intersections. This scale compares traffic volumes to intersection capacity and assigns a letter value to this relationship. The letter scale ranges from A to F with LOS A representing free flow conditions and LOS F representing congested conditions. The level of service criteria are summarized in Table 1.



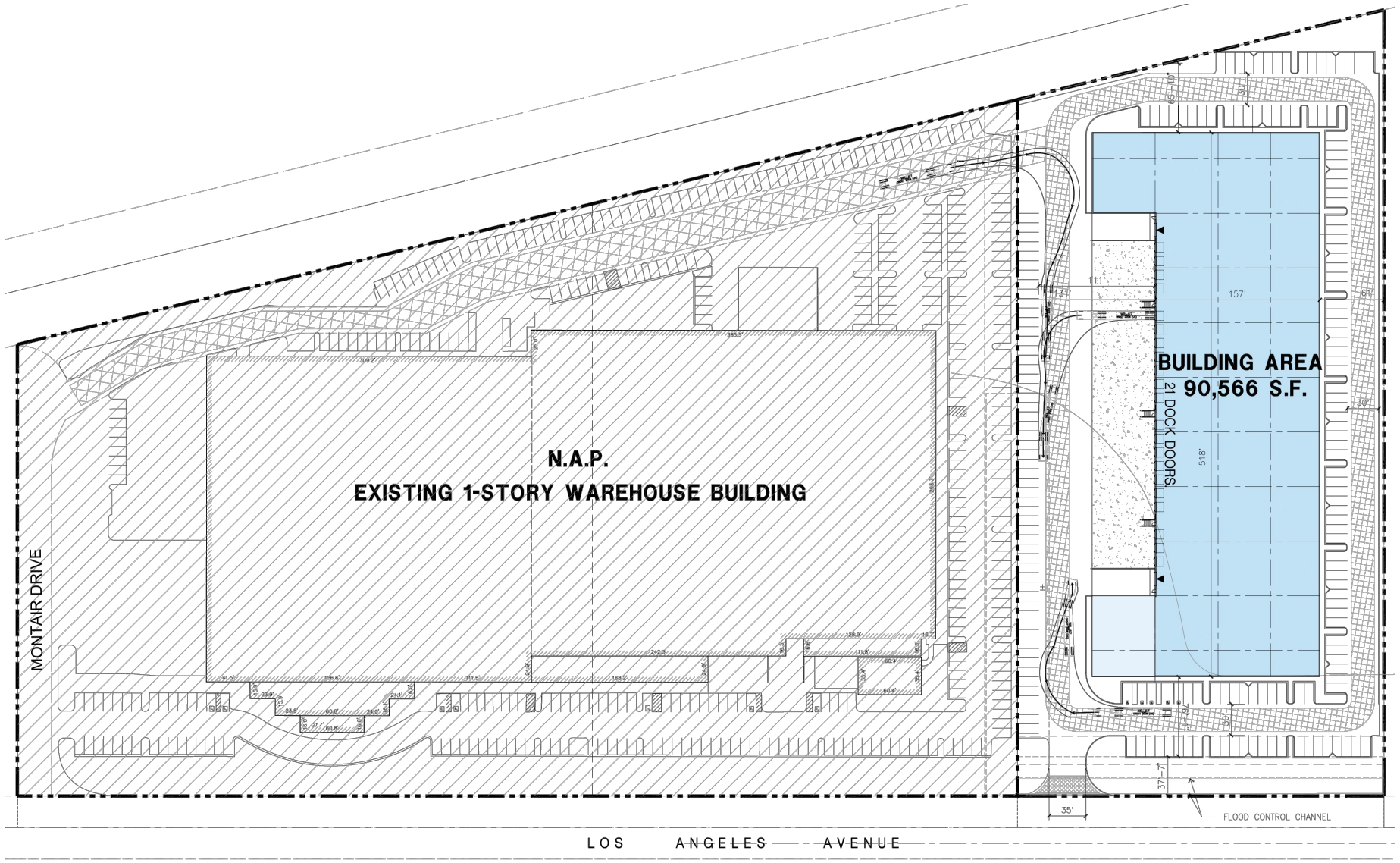
Stantec
111 East Victoria Street, Santa Barbara, CA 93101
Phone: (805) 963-9532 Fax: (805) 966-9801

N

N.T.S.

EXHIBIT 1

EXISTING STREET NETWORK/
PROJECT SITE LOCATION



Stantec
111 East Victoria Street, Santa Barbara, CA 93101
Phone: (805) 963-9532 Fax: (805) 966-9801

N.T.S.

EXHIBIT 2
PROJECT SITE PLAN

Table1
Intersection Level of Service Criteria

LOS	Signalized Intersections (V/C Ratio)	Signalized Intersections (Sec. of Delay)	Unsignalized Intersections (Sec. of Delay)	Definition
A	< 0.60	≤ 10	≤ 10	Conditions of free unobstructed flow, no delays and all signal phases sufficient in duration to clear all approaching vehicles.
B	0.61 – 0.70	> 10 and ≤ 20	> 10 and ≤ 15	Conditions of stable flow, very little delay, a few phases are unable to handle all approaching vehicles.
C	0.71- 0.80	> 20 and ≤ 35	> 15 and ≤ 25	Conditions of stable flow, delays are low to moderate, full use of peak direction signal phases is experienced.
D	0.81 – 0.90	> 35 and ≤ 55	> 25 and ≤ 35	Conditions approaching unstable flow, delays are moderate to heavy, significant signal time deficiencies are experienced for short durations during the peak traffic period.
E	0.91 – 1.00	> 55 and ≤ 80	> 35 and ≤ 50	Conditions of unstable flow, delays are significant, signal phase timing is generally insufficient, congestion exists for extended duration throughout the peak period.
F	> 1.00	> 80	> 50	Conditions of forced flow, travel speeds are low and volumes are well above capacity. This condition is often caused when vehicles released by an upstream signal are unable to proceed because of back-ups from a downstream signal

Source: Highway Capacity Manual, 6th Edition.

The City of Moorpark considers LOS C or better acceptable for intersection operations, and Caltrans considers the transition from LOS C to LOS D.

Level of Service Calculation Methodology

Levels of service for the signalized intersections in the study area were calculated using the Intersection Capacity Utilization Methodology (ICU) and the results are shown as a volume-to-capacity (V/C) ratio. Levels of service for unsignalized intersections were calculated using the methodologies outlined in the Highway Capacity Manual (HCM)[1], which expresses intersection levels of service in seconds of delay and queue lengths for each approach.

EXISTING CONDITIONS

Roadway Network

The roadway system in the study area is comprised of a network of freeways, arterials and collectors. The study area roadway network is shown in Exhibit 3 and a brief description of the major components is provided below.

State Route 23 (SR 23) extends northerly from U.S. Highway 101 as a six-lane freeway until it connects to Los Angeles Avenue, where the freeway turns east and becomes State Route 118.

[1] Highway Capacity Manual, 6th Edition: A Guide for Multi-Modal Mobility Analysis, Transportation Research Board, 2016.

The interchanges with Los Angeles Avenue and with Tierra Rejada Road provide regional access to the project site.

State Route 18 (SR 118) extends east from State Route 126 to Interstate 210 in Los Angeles County. Within the study area, the roadway is a four- to six-lane highway (Los Angeles Ave) with at-grade intersections. At its intersection with SR 23 the state route continues as a four-lane freeway into Simi Valley. Access to the site is provided via the Los Angeles Ave/Montair Dr intersection, which is controlled by a stop sign on Montair Dr.

Tierra Rejada Road is an four-lane divided arterial roadway with Class II bike lanes that extends southeast from Los Angeles Avenue through the southern portion of Moorpark and continues easterly into the County of Ventura and Simi Valley. All major intersections, including the ramp intersections with SR 23 are signalized. The intersection with the project driveway, located approximately 1,400 feet east of the interchange, is controlled by a stop sign on the project driveway.

Spring Road is a four-lane arterial road north of Los Angeles Avenue and a two-lane collector road south of Los Angeles Avenue. Spring Road provides a connection between Walnut Canyon Road/SR-23 to the north and Tierra Rejada Road to the south.

Moorpark Avenue is a two-lane road collector road in the City's General Plan that extends north-south from Walnut Canyon Road to the north to the Arroyo River.

Alternative Transportation

The Moorpark City Transit (MCT) provides two fixed route bus routes between Moorpark College to east and Gabbert Road to the west. VISTA Routes 70-73X provide regional bus service between Thousand Oaks and Simi Valley, with three stops in Moorpark Metro. VISTA Route 77 provides regional bus service between Simi Valley and Ventura, with two stops in Moorpark. The Metrolink Ventura County Line provides commuter rail service from Ventura to the San Fernando Valley and the City of Los Angeles. The Moorpark Metrolink Station is located on High Street east of Spring Street.

Existing Intersection Operations

A total of 12 intersections were selected for analysis in consultation with City of Moorpark staff. Because current AM and PM commute traffic continues to be affected by both temporary workforce changes and increase in telecommuting, new traffic counts at these intersections would not be considered to be representative of traffic flow occurring under normal conditions. Stantec therefore used intersection counts collected in May 2019 and provided by the City. New average daily traffic (ADT) counts were collected on Los Angeles Avenue, and new counts were collected at the Los Angeles Ave/Montair Dr intersection in October 2021.

The lane geometry and control for the intersections within the study area are shown in Exhibit 3 and the AM and PM peak hour volumes are illustrated in Exhibit 4. Levels of service were calculated for the study-area intersections based on the level of service methodology outlined

previously. The technical calculation worksheets are included in the Technical Appendix, and the existing intersection levels of service are summarized in Table 2.

Table 2
Existing AM and PM Peak Hour Intersection Levels of Service

Intersection	Jurisdiction	Control	AM Peak Hour V/C - LOS	PM Peak Hour V/C - LOS
1. Los Angeles Ave (SR 118)/Grimes Cyn Rd	County/Ct	Signal	0.67/LOS B	0.73/LOS C
2. Los Angeles Ave (SR 118)/Montair Dr [1]	Moorpark/Ct	One-way stop	*31.1 sec/D*	*>50.0 sec/F*
3. Los Angeles Ave (SR 118)/Tierra Rejada Rd	Moorpark/Ct	Signal	0.75/LOS C	0.59/LOS A
4. Los Angeles Ave (SR 118)/Moorpark Ave	Moorpark/Ct	Signal	0.58/LOS A	0.65/LOS B
5. Los Angeles Ave (SR 118)/Spring Rd	Moorpark/Ct	Signal	0.70/LOS B	0.72/LOS C
6. Los Angeles Ave (SR 118)/Miller Pkwy	Moorpark./Ct	Signal	0.58/LOS A	0.70/LOS B
7. Los Angeles Ave (SR 118)/SR 23 SB Ramps	Moorpark./Ct	Signal	0.43/LOS A	0.74/LOS C
8. Los Angeles Ave (SR 118)/SR 23 NB Ramps	Moorpark./Ct	Signal	0.29/LOS A	0.51/LOS A
9. Tierra Rejada Rd/Spring Rd	Moorpark	Signal	0.69/LOS B	0.61/LOS B
10. Tierra Rejada Rd/Moorpark Rd	Moorpark	Signal	*0.86/LOS D*	0.77/LOS C
11. Tierra Rejada Rd/SR 23 SB Ramps	Moorpark./Ct	Signal	0.64/LOS B	*0.85/LOS D*
12. Tierra Rejada Rd/SR 23 NB Ramps	Moorpark./Ct	Signal	0.59/LOS A	*0.88/LOS D*

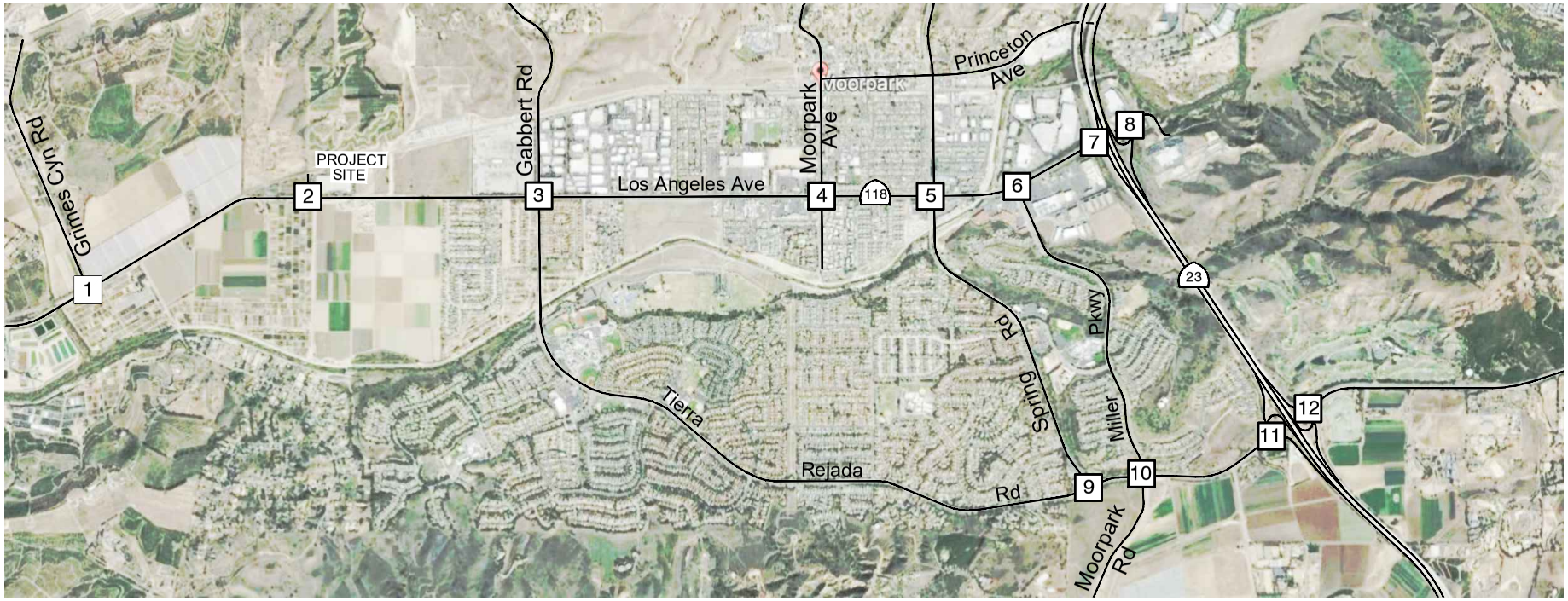
[1] Unsignalized intersection: level of service based on seconds of delay on minor street.
CT = Caltrans.

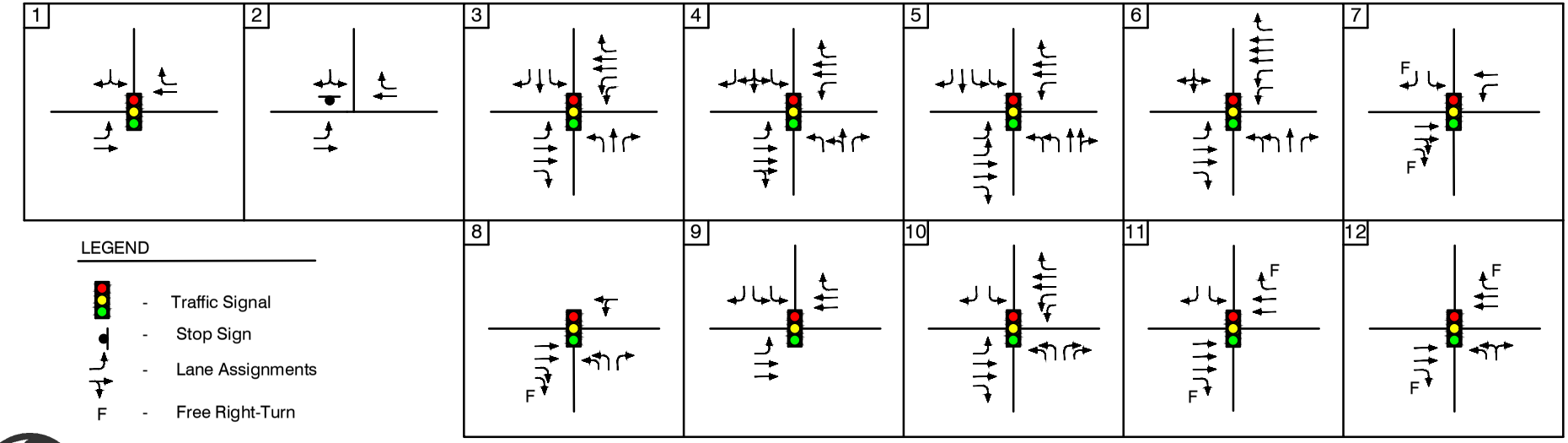
As shown in Table 2, the Los Angeles Ave/Montair Dr intersection, Tierra Rejada Rd/Moorpark Rd intersection and Tierra Rejada Rd/SR 23 Interchange operate at LOS D-F, which is below the acceptable threshold by the City of Moorpark and Caltrans.

Traffic Signal Warrant Analysis

A traffic signal warrant analysis was completed for the Los Angeles Avenue/Montair Dr intersection based on Caltrans signal warrant criteria[2] considering peak hour volumes and vehicle delay. Under existing conditions, Caltrans *Warrant 3 - Peak Hour* is not satisfied, because the minor street traffic volume and delay are below the minimum criteria. Review of collision data (CHP SWITRS) indicated two collisions from 2018 to December 2020. Therefore, installation of a traffic signal is not warranted under existing conditions.

[2] Chapter 4C. Traffic Control Signal Needs Studies, CAMUTCD 2014 Edition, Revision 6, 2021.





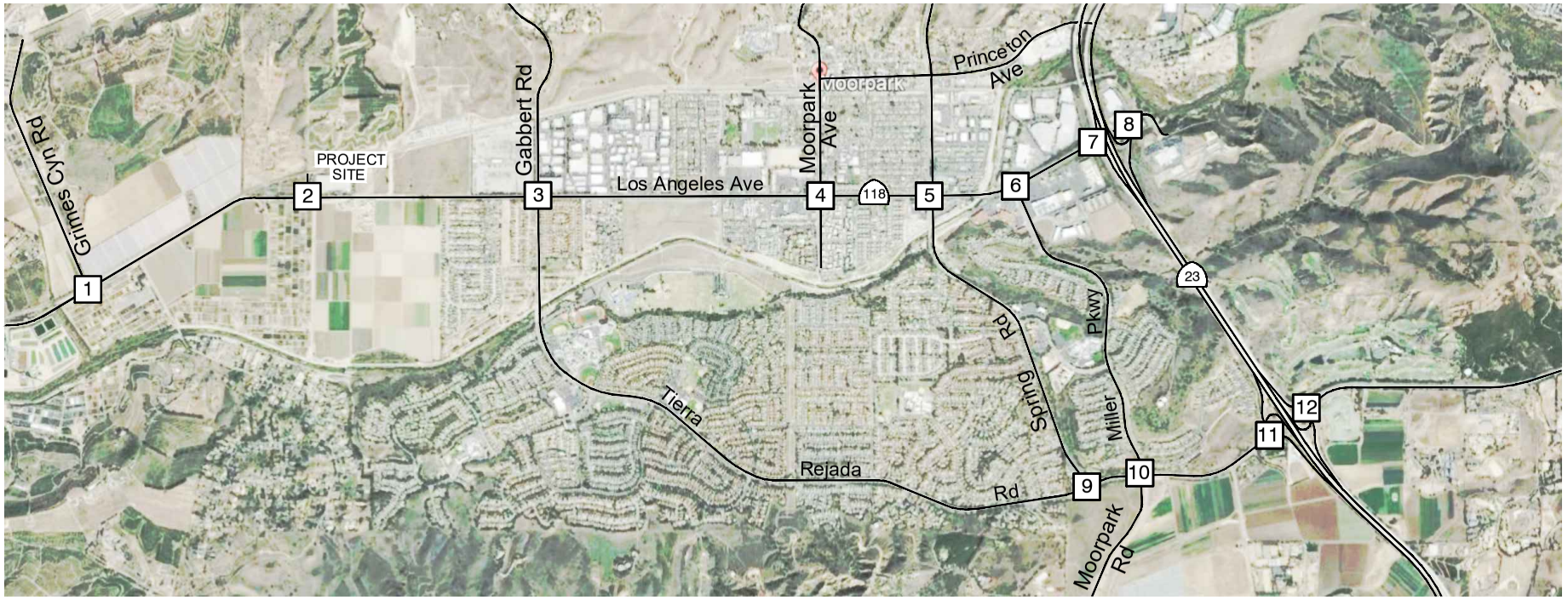
LEGEND

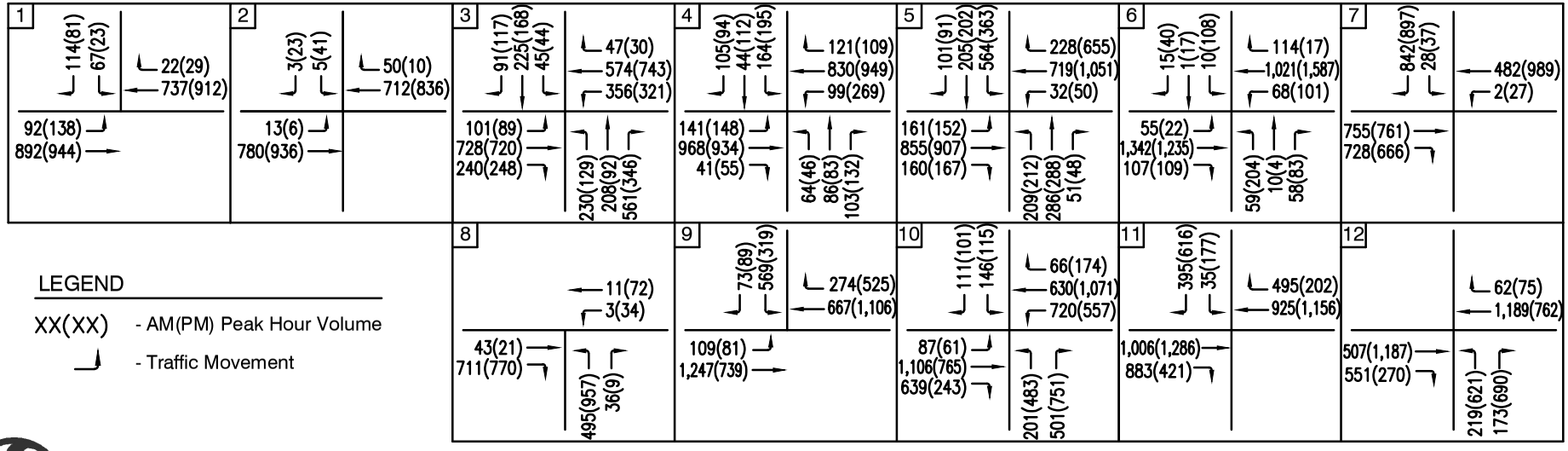
- Traffic Signal
- Stop Sign
- Lane Assignments
- F - Free Right-Turn

Stantec
111 East Victoria Street, Santa Barbara, CA 93101
Phone: (805) 963-9532 Fax: (805) 966-9801

EXHIBIT 3

EXISTING INTERSECTION GEOMETRIES





Stantec
111 East Victoria Street, Santa Barbara, CA 93101
Phone: (805) 963-9532 Fax: (805) 966-9801

EXHIBIT 4
EXISTING INTERSECTION VOLUMES

PROJECT SPECIFIC CONDITIONS

Traffic Impact Thresholds

City of Moorpark. Based on guidance provided by the City of Moorpark, a traffic impact is considered significant if the increase in the V/C ratio value equals or exceeds the thresholds shown below for signalized and un-signalized study intersections, respectively.

Signalized intersections:

1. Degrades the LOS at an signalized intersection to an unacceptable level of Service (LOS D or worse);
2. Degrades the LOS at a signalized intersection operating at an unacceptable level of Service (LOS D or worse); or
3. Increases V/C at a signalized intersection operating at LOS F by 0.020 or more.

Unsignalized intersections:

1. Degrades the LOS at an un-signalized intersection to an unacceptable level of Service (LOS D or worse);
2. Increases delay at an un-signalized intersection operating at an unacceptable level by five or more seconds; or
3. Results in satisfying the most recent California Manual on Uniform Traffic Control Devices (CAMUTCD) peak hour volume warrant or other warrants for traffic signal installation at the intersection.

Project Trip Generation

The project proposed to develop a 90,566 square feet industrial building of which 4,000 SF would be office space and 86,566 SF would be warehouse. Rates contained in the Institute of Transportation Engineers (ITE) Trip Generation Manual (11th Edition) for Land Use #150 - Warehouse and Land Use #712 – Small Office Building reviewed to determine the project trip generation. The description of Warehouse is as follows: "A warehouse is primarily devoted to the storage of materials, but it may also include office and maintenance areas." Given that the office portion of the new building would constitute approximately 4% of the total size, the ITE description for Warehouse would apply to the entire building. However, to provide for a conservative trip estimate, both Warehouse and Small Office Building are also calculated separately. Table 3 shows the trip generation estimates for the proposed project for both calculation methods.

Table 3
Project Trip Generation

Land Use	Size	ADT	AM			PM		
			In	Out	Total	In	Out	Total
Warehouse	90.566 KSF	155	26	8	34	10	27	37
Warehouse	*86.566 KSF*	*148*	*26*	*8*	*34*	*10*	*27*	*37*
Small Office Building	*4 KSF*	*58*	*5*	*2*	*7*	*3*	*6*	*9*
Total		216	31	10	41	13	33	46

The more conservate approach was applied, in which the project is expected to generate 216 average daily trips, with 41 trips occurring in the AM peak hour and 46 trips occurring in the PM peak hour.

Project Trip Distribution

The proposed project trip distribution is based on the regional trip distribution guidelines contained in the City's *Guidelines for Preparing Traffic and Circulation Studies* and are adjusted for the project's location. The project trip distribution percentages and the project-added traffic volumes are shown in Exhibit 5.

Existing plus Project Intersection Operations

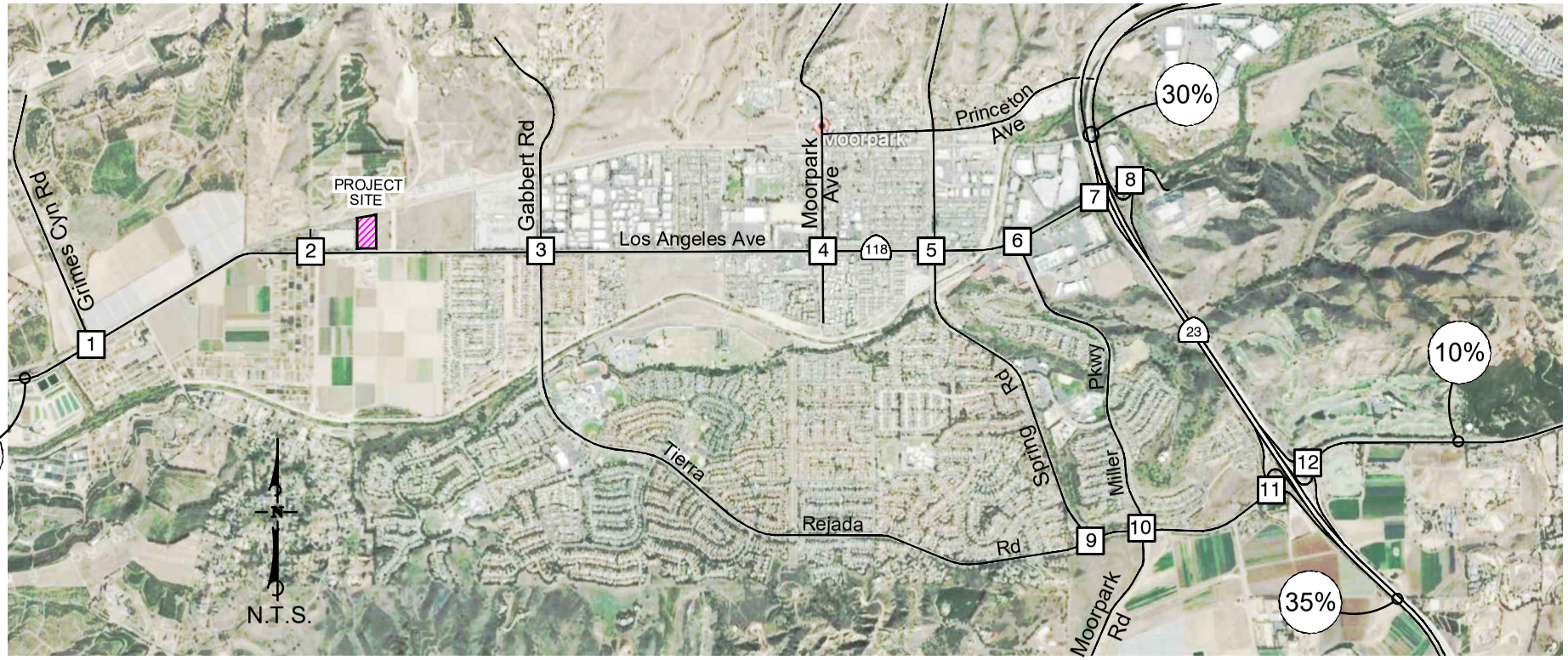
Project generated traffic was added to the existing peak hour traffic volumes and levels of service were recalculated for existing plus project conditions. The existing plus project traffic volumes are illustrated in Exhibit 6. Tables 4 and 5 summarize the level of service calculations for project-specific conditions.

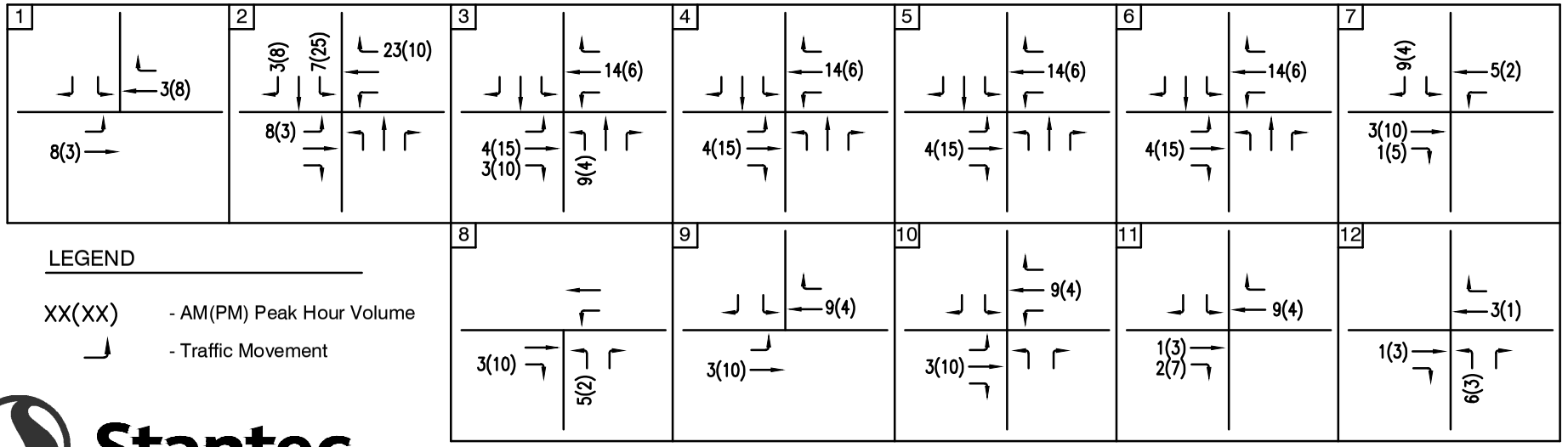
Table 4
Existing + Project AM Peak Hour Intersection Levels of Service

Intersection	AM Peak Hour			Impact?
	Existing V/C - LOS	Existing + Project V/C - LOS	V/C Increase	
1. Los Angeles Ave (SR 118)/Grimes Cyn Rd	0.67/LOS B	0.67/LOS B	N/A	No
2. Los Angeles Ave (SR 118)/Montair Dr [1]	*31.1 sec/D*	*35.9 sec/E*	*4.8 sec.*	No
3. Los Angeles Ave (SR 118)/Tierra Rejada Rd	0.75/LOS C	0.75/LOS C	N/A	No
4. Los Angeles Ave (SR 118)/Moorpark Ave	0.58/LOS A	0.58/LOS A	N/A	No
5. Los Angeles Ave (SR 118)/Spring Rd	0.70/LOS B	0.70/LOS B	N/A	No
6. Los Angeles Ave (SR 118)/Miller Pkwy	0.58/LOS A	0.58/LOS A	N/A	No
7. Los Angeles Ave (SR 118)/SR 23 SB Ramps	0.43/LOS A	0.43/LOS A	N/A	No
8. Los Angeles Ave (SR 118)/SR 23 NB Ramps	0.29/LOS A	0.29/LOS A	N/A	No
9. Tierra Rejada Rd/Spring Rd	0.69/LOS B	0.69/LOS B	N/A	No
10. Tierra Rejada Rd/Moorpark Rd	*0.86/LOS D*	*0.86/LOS D*	0.001	No
11. Tierra Rejada Rd/SR 23 SB Ramps	0.64/LOS B	0.65/LOS B	N/A	No
12. Tierra Rejada Rd/SR 23 NB Ramps	0.59/LOS A	0.59/LOS A	N/A	No

N/A = Not applicable, intersection operates at LOS C or better.
[1] Unsignalized intersection: level of service based on seconds of delay on minor street.

The data in Table 4 indicates that the project would add to delays at the Los Angeles Ave/Montair Dr intersection. The increase of 4.8 seconds is below the City's impact threshold of 5 seconds or more, therefore no impact is generated. The Tierra Rejada Rd/Moorpark Rd intersection will continue to operate in the LOS D range, however the project generated increase of V/C 0.001 would not generate an impact.





LEGEND

XX(XX) - AM(PM) Peak Hour Volume

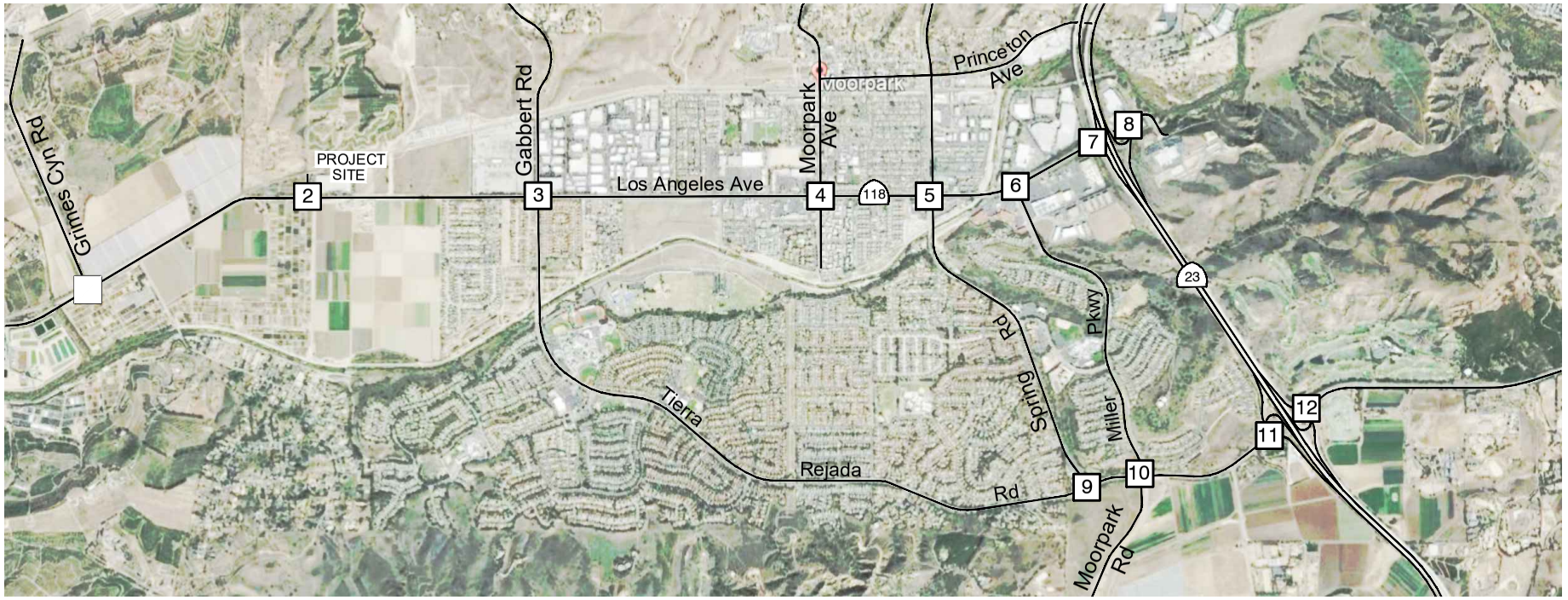
- Traffic Movement

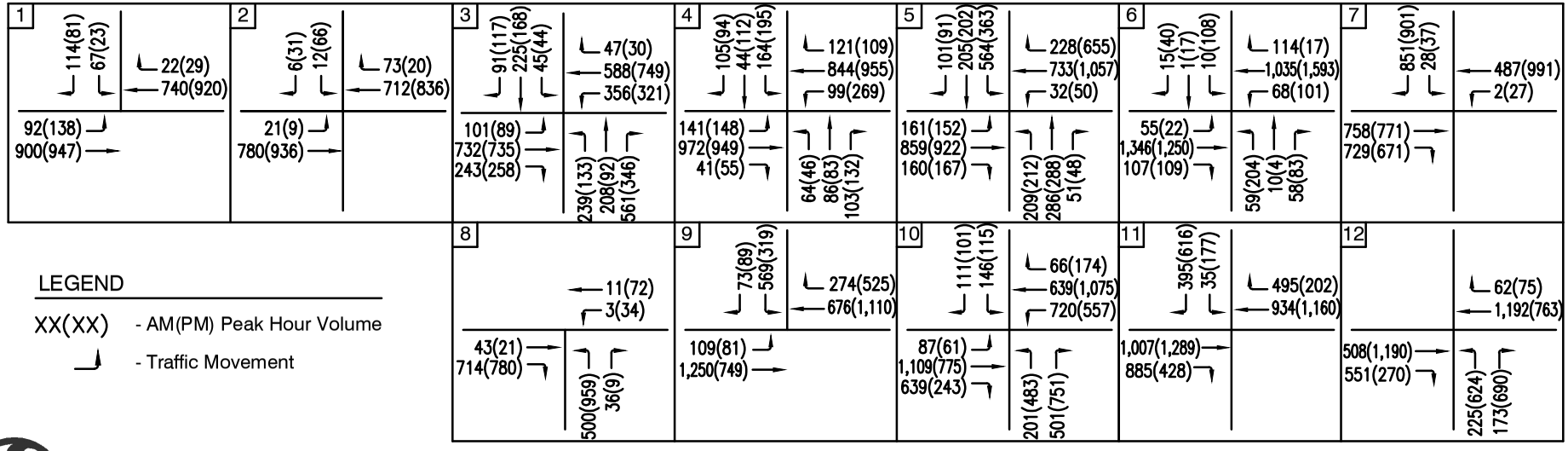
Stantec

111 East Victoria Street, Santa Barbara, CA 93101
Phone: (805) 963-9532 Fax: (805) 966-9801

EXHIBIT 5

PROJECT TRIP DISTRIBUTION





Stantec
111 East Victoria Street, Santa Barbara, CA 93101
Phone: (805) 963-9532 Fax: (805) 966-9801

EXHIBIT 6
EXISTING + PROJECT INTERSECTION VOLUMES

Table 5
Existing + Project PM Peak Hour Intersection Levels of Service

Intersection	PM Peak Hour			Impact?
	Existing V/C - LOS	Existing + Project V/C - LOS	V/C Increase	
1. Los Angeles Ave (SR 118)/Grimes Cyn Rd	0.73/LOS C	0.74/LOS C	N/A	No
2. Los Angeles Ave (SR 118)/Montair Dr [1]	*>50.0 sec/F*	*>50.0 sec/F*	*>5.0 sec*	**Yes**
3. Los Angeles Ave (SR 118)/Tierra Rejada Rd	0.59/LOS A	0.59/LOS A	N/A	No
4. Los Angeles Ave (SR 118)/Moorpark Ave	0.65/LOS B	0.65/LOS B	N/A	No
5. Los Angeles Ave (SR 118)/Spring Rd	0.72/LOS C	0.72/LOS C	N/A	No
6. Los Angeles Ave (SR 118)/Miller Pkwy	0.70/LOS B	0.70/LOS B	N/A	No
7. Los Angeles Ave (SR 118)/SR 23 SB Ramps	0.74/LOS C	0.74/LOS C	N/A	No
8. Los Angeles Ave (SR 118)/SR 23 NB Ramps	0.51/LOS A	0.51/LOS A	N/A	No
9. Tierra Rejada Rd/Spring Rd	0.61/LOS B	0.61/LOS B	N/A	No
10. Tierra Rejada Rd/Moorpark Rd	0.77/LOS C	0.77/LOS C	N/A	No
11. Tierra Rejada Rd/SR 23 SB Ramps	*0.85/LOS D*	*0.85/LOS D*	0.002	No
12. Tierra Rejada Rd/SR 23 NB Ramps	*0.88/LOS D*	*0.88/LOS D*	0.002	No

N/A = Not applicable, intersection operates at LOS C or better.
[1] Unsignalized intersection: level of service based on seconds of delay on minor street.

As shown in Table 5, the project would add more than 5 seconds per vehicle to the delays at the Los Angeles Ave/Montair Dr intersection, which is considered an impact based on the City's impact thresholds. The Tierra Rejada Rd/SR 23 Interchange will continue to operate in the LOS D range, however the project generated increase of V/C 0.002 at the SR 23 Northbound Ramp or Southbound Ramp intersection would not generate an impact.

Traffic Signal Warrant Analysis

Existing plus project peak hour traffic volumes were evaluated to determine the need for traffic signals at the Los Angeles Ave/Montair Dr intersection under project-specific conditions. The existing + project traffic volumes and minor street delays would satisfy Caltrans *Warrant 3 - Peak Hour*.

CUMULATIVE CONDITIONS

The cumulative (existing plus approved and pending projects) conditions serves as a near future baseline to assess potential impacts generated by the project. Cumulative projects traffic forecasts were developed based on the City of Moorpark *Quarterly Status Report* and the *Cumulative Developments Projects Trip Generation* list, both provided by City staff and included in the Technical Appendix.

Cumulative Projects Trip Generation and Distribution

Trip generation estimates for the approved projects were developed using the City's *Cumulative Developments Projects Trip Generation* list and trips were distributed based on the location of each approved project, project distribution data contained in traffic studies completed for several approved and pending projects, and existing traffic patterns in the study area. The cumulative traffic volumes are illustrated in Exhibit 7.

Cumulative plus Project Intersection Operations

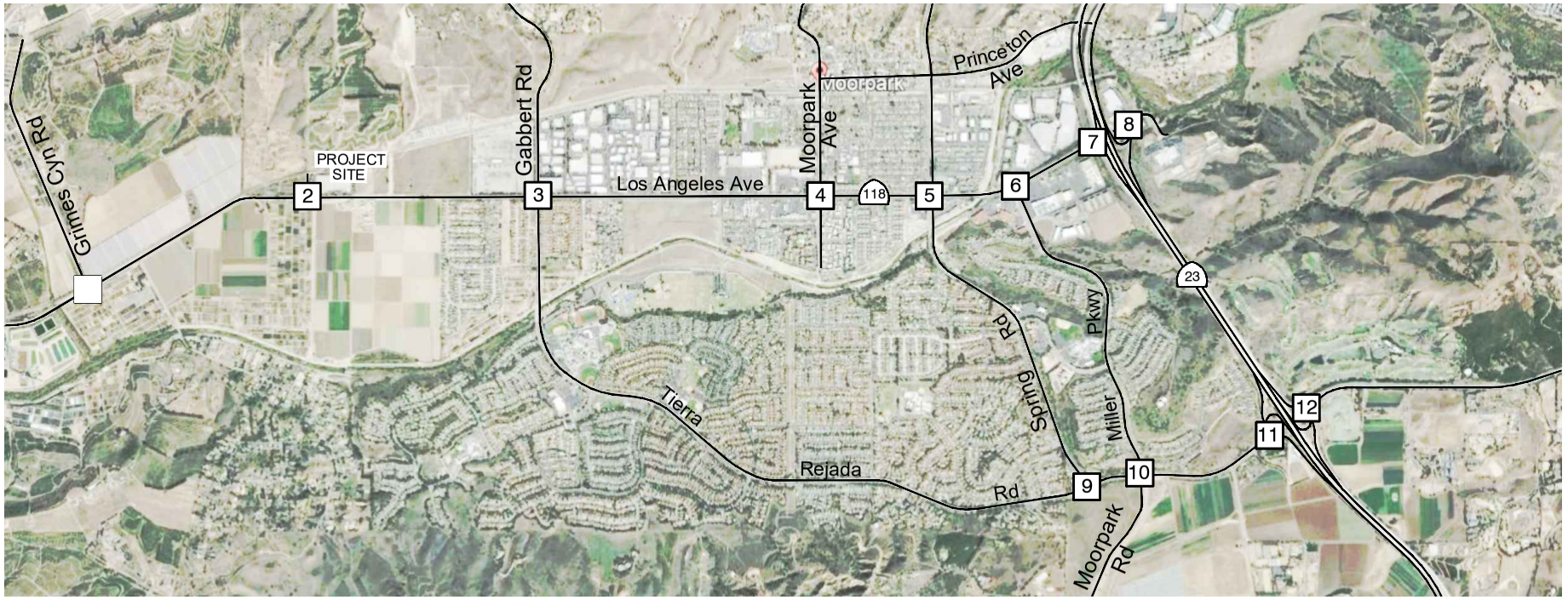
The cumulative plus project traffic volumes are illustrated in Exhibit 8. Intersection levels of service were recalculated assuming cumulative and cumulative plus project conditions. Tables 6 and 7 summarize the buildout and buildout plus project level of service calculations.

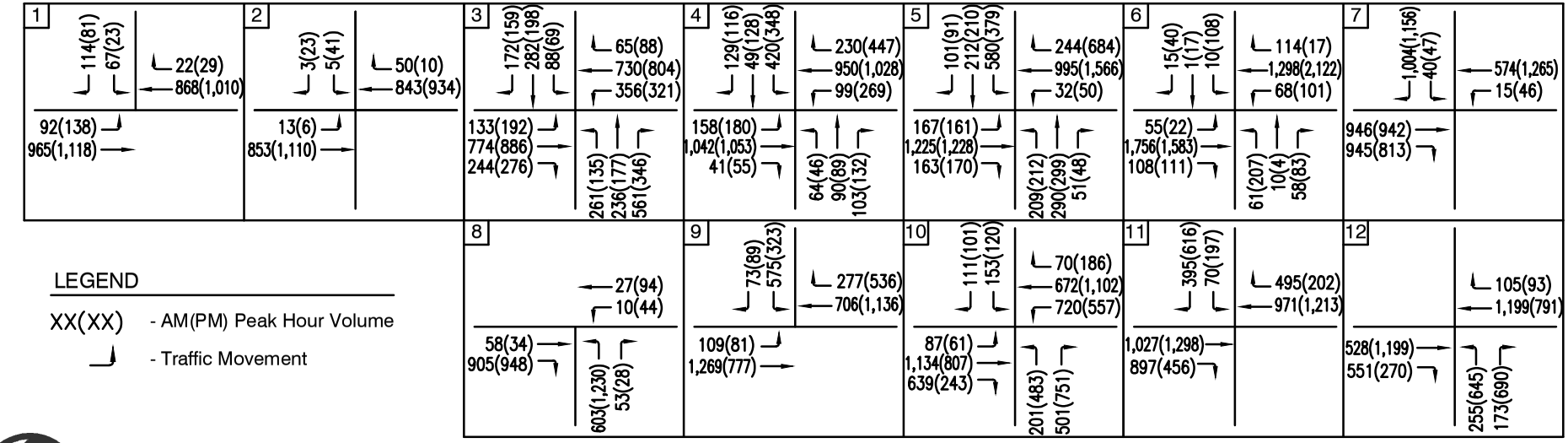
Table 6
Cumulative + Project AM Peak Hour Intersection Levels of Service

Intersection	AM Peak Hour			Impact?
	Cumulative V/C - LOS	Cumulative + Project V/C - LOS	V/C Increase	
1. Los Angeles Ave (SR 118)/Grimes Cyn Rd	0.71/LOS C	0.72/LOS C	N/A	No
2. Los Angeles Ave (SR 118)/Montair Dr [1]	*41.2 sec/E*	*49.5 sec/E*	*8.3 sec.*	**Yes**
3. Los Angeles Ave (SR 118)/Tierra Rejada Rd	0.79/LOS C	0.79/LOS C	N/A	No
4. Los Angeles Ave (SR 118)/Moorpark Ave	0.68/LOS B	0.68/LOS B	N/A	No
5. Los Angeles Ave (SR 118)/Spring Rd	*0.81/LOS D*	*0.81/LOS D*	0.001	No
6. Los Angeles Ave (SR 118)/Miller Pkwy	0.71/LOS C	0.71/LOS C	N/A	No
7. Los Angeles Ave (SR 118)/SR 23 SB Ramps	0.53/LOS A	0.53/LOS A	N/A	No
8. Los Angeles Ave (SR 118)/SR 23 NB Ramps	0.35/LOS A	0.35/LOS A	N/A	No
9. Tierra Rejada Rd/Spring Rd	0.70/LOS B	0.70/LOS B	N/A	No
10. Tierra Rejada Rd/Moorpark Rd	*0.87/LOS D*	*0.88/LOS D*	0.001	No
11. Tierra Rejada Rd/SR 23 SB Ramps	0.65/LOS C	0.66/LOS C	N/A	No
12. Tierra Rejada Rd/SR 23 NB Ramps	0.60/LOS A	0.61/LOS B	N/A	No

N/A = Not applicable, intersection operates at LOS C or better.

[1] Unsignalized intersection: level of service based on seconds of delay on minor street.





LEGEND

XX(XX) - AM(PM) Peak Hour Volume

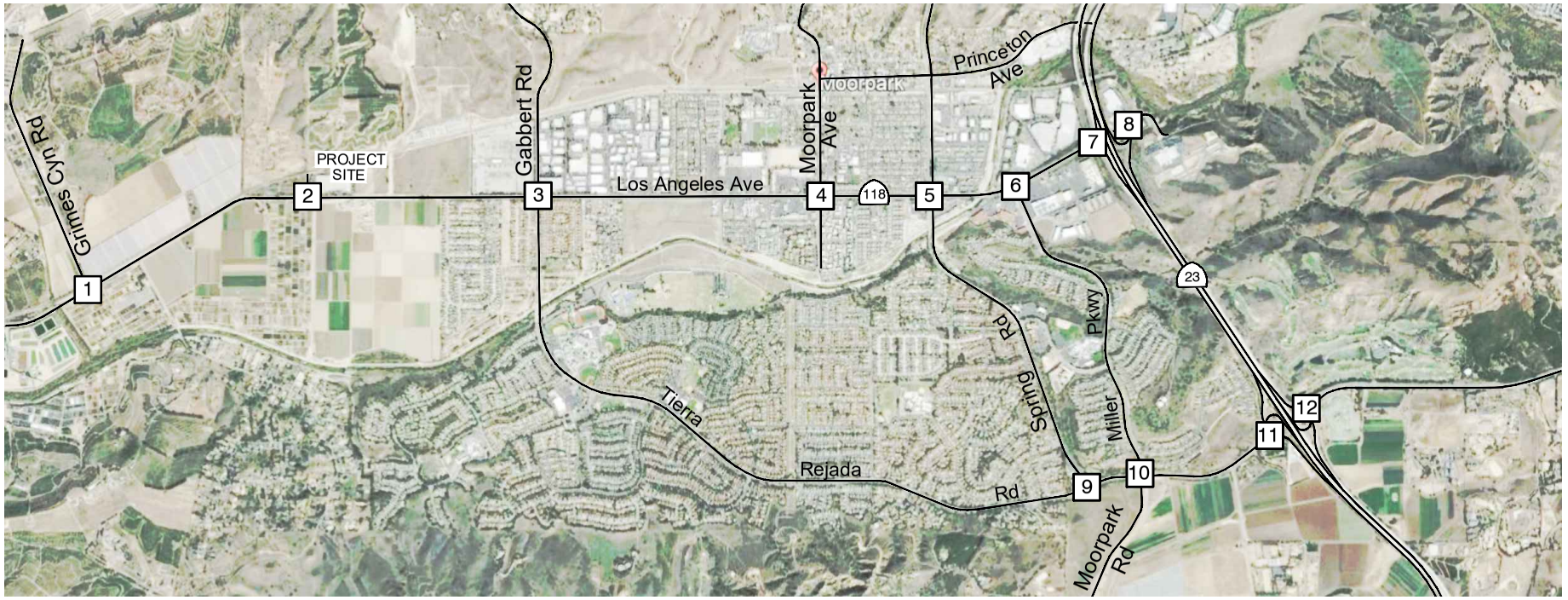
- Traffic Movement

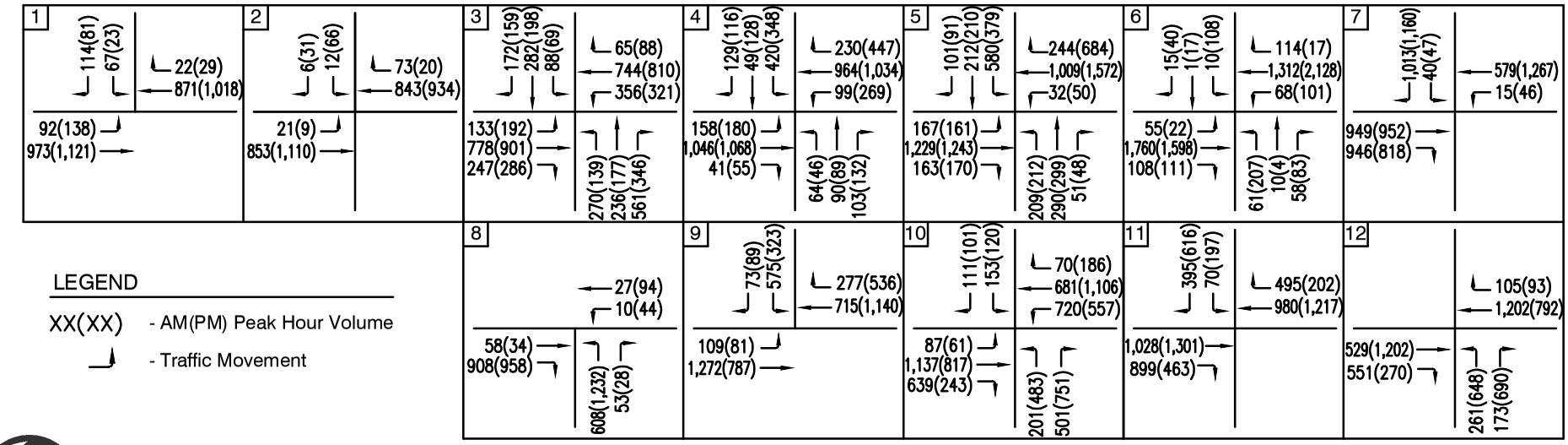
Stantec

111 East Victoria Street, Santa Barbara, CA 93101
Phone: (805) 963-9532 Fax: (805) 966-9801

EXHIBIT 7

CUMULATIVE INTERSECTION VOLUMES





LEGEND

XX(XX) - AM(PM) Peak Hour Volume

- Traffic Movement

Stantec

111 East Victoria Street, Santa Barbara, CA 93101
Phone: (805) 963-9532 Fax: (805) 966-9801

EXHIBIT 8

CUMULATIVE + PROJECT INTERSECTION VOLUMES

Table 7
Cumulative + Project PM Peak Hour Intersection Levels of Service

Intersection	PM Peak Hour			Impact?
	Cumulative V/C - LOS	Cumulative + Project V/C - LOS	V/C Increase	
1. Los Angeles Ave (SR 118)/Grimes Cyn Rd	0.79/LOS C	0.80/LOS C	N/A	No
2. Los Angeles Ave (SR 118)/Montair Dr [1]	*>50.0 sec/F*	*>50.0 sec/F*	*>5.0 sec*	**Yes**
3. Los Angeles Ave (SR 118)/Tierra Rejada Rd	0.65/LOS B	0.65/LOS B	N/A	No
4. Los Angeles Ave (SR 118)/Moorpark Ave	0.73/LOS C	0.73/LOS C	N/A	No
5. Los Angeles Ave (SR 118)/Spring Rd	*0.89/LOS D*	*0.89/LOS D*	0.002	No
6. Los Angeles Ave (SR 118)/Miller Pkwy	0.80/LOS C	*0.81/LOS D*	0.001	No
7. Los Angeles Ave (SR 118)/SR 23 SB Ramps	*0.91/LOS E*	*0.91/LOS E*	0.001	No
8. Los Angeles Ave (SR 118)/SR 23 NB Ramps	0.63/LOS B	0.63/LOS A	N/A	No
9. Tierra Rejada Rd/Spring Rd	0.62/LOS B	0.62/LOS B	N/A	No
10. Tierra Rejada Rd/Moorpark Rd	0.78/LOS C	0.79/LOS C	N/A	No
11. Tierra Rejada Rd/SR 23 SB Ramps	*0.87/LOS D*	*0.87/LOS D*	0.002	No
12. Tierra Rejada Rd/SR 23 NB Ramps	*0.89/LOS D*	*0.90/LOS D*	0.002	No

N/A = Not applicable, intersection operates at LOS C or better.
[1] Unsignalized intersection: level of service based on seconds of delay on minor street.

The level of service data contained in Tables 6 and 7 indicates that three intersections are expected to operate below the LOS C standard during the AM peak hour, and six intersections are expected to operate below the LOS C standard during the PM peak hour. The project would generate a cumulative impact at the Los Angeles Ave/Montair Dr intersection based on the City's impact thresholds. The project generated increase of V/C 0.002 or less at the remaining intersections at the SR 23 Northbound Ramp or Southbound Ramp intersection would not generate a cumulative impact.

Traffic Signal Warrant Analysis

Cumulative plus project peak hour traffic volumes were evaluated to determine the need for traffic signals at the Los Angeles Ave/Montair Dr intersection under cumulative + project conditions. The cumulative + project traffic volumes and minor street delays would satisfy Caltrans *Warrant 3 - Peak Hour*.

PROJECT SITE ACCESS, CIRCULATION

Project Site Access

Access is proposed via the existing Los Angeles Ave/Montair Dr intersection and one new driveway connection on the north side of Los Angeles Avenue. The new driveway will be located between

the existing Pentair building and the proposed building and will be restricted to emergency access only.

The Los Angeles Ave/Montair Dr intersection is controlled by a stop sign on the Montair Drive, a local two-lane street that provides access to the existing Pentair building. Los Angeles Avenue contains a through lane and a left-turn lane with a storage of 200 feet in the eastbound direction, and a through lane and a right-turn lane with a storage of 100 feet in the westbound direction. The southbound approach is a shared left/right turn lane.

The intersection currently operates in the LOS E/F range and delays on the southbound approach are expected to further increase under project-specific and future conditions. The 95th percentile queue would be in excess of 200' during the PM peak hour. The analysis indicates that existing + project and cumulative + project traffic volumes, along minor street delays, would satisfy Caltrans *Warrant 3 - Peak Hour*. Installation of a traffic signal at the Los Angeles Ave/Montair Dr intersection is therefore recommended to maintain acceptable operations.

The proposed driveway on Los Angeles Avenue between the existing Pentair building and the proposed building will be restricted to emergency vehicles access only. The driveway connection should be designed to accommodate emergency (fire truck) vehicle turning requirements. It is noted that if access of the driveway connection is not restricted to emergency vehicles access only, intersection design will have to conform to Caltrans expressway standards. This would include provision of speed change (turning) lanes on the eastbound and westbound approaches.

The *Moorpark West Studios* development is located immediately east of the project site. This development is approved but not yet constructed. Primary access to this development is via the new Los Angeles Ave/North Hills Pkwy intersection, which will be signalized. The on-site circulation system of the *Moorpark West Studios* could include a roadway connection to the Pentair site, thereby providing for alternative access to the project site.

Circulation

The on-site circulation system for the existing building is comprised of Montair Drive, which terminates south of the railroad tracks, and an on-site east-west drive aisle that parallels the railroad tracks. Parking aisles are provided east and south of the existing building. The project's circulation systema and parking layout is designed to connect to the existing circulation system. The preliminary site plan indicates that the site is designed to accommodate the design vehicle (Caltrans STAA truck) and passenger car movements.

The parking area layout for the existing building includes a driveway connection to Montair Drive located approximately 50 feet north of the Los Angeles Ave/Montair Dr intersection. Turning restrictions may be implemented at the existing driveway connection in order to minimize conflicts between intersection operations and internal circulation,

MITIGATION MEASURES

Project-Specific Mitigations

The project-specific analysis found that the project would generate a project-specific impact at the Los Angeles Ave/Montair Dr intersection based on City of Moorpark Oaks impact thresholds. Existing plus project peak hour traffic volumes were evaluated to determine the need for traffic signals at the Los Angeles Ave/Montair Dr intersection. The existing + project traffic volumes and minor street delays would satisfy Caltrans *Warrant 3 - Peak Hour*. It is recommended that a traffic signal be installed at the Los Angeles Ave/Montair Dr intersection to maintain acceptable operations. Table 8 shows the mitigated intersection levels of service assuming existing intersection lane geometry and a traffic signal.

The proposed driveway on Los Angeles Avenue between the existing Pentair building and the proposed building will be restricted to emergency vehicles access only. The proposed driveway connection should be designed to accommodate emergency (fire truck) vehicle turning requirements.

Cumulative Mitigations

The cumulative analysis indicated that the project would generate a cumulative impact at the Los Angeles Ave/Montair Dr intersection based on the City's impact thresholds. The cumulative + project traffic volumes and minor street delays would satisfy Caltrans *Warrant 3 - Peak Hour*. Table 8 shows the mitigated intersection levels of service assuming the existing intersection lane geometry and installation of a traffic signal.

Table 8
Los Angeles Ave/Montair Dr Intersection
Mitigated AM and PM Peak Hour Levels of Service

	AM Peak Hour		PM Peak Hour	
Scenario	**Delay - LOS**	**Mitigated V/C - LOS**	**Delay - LOS**	**Mitigated V/C - LOS**
Existing + Project Conditions	35.9 sec/LOS E	0.60/LOS B	>50.0 sec/LOS F	0.65/LOS B
Cumulative + Project Conditions	>50.0 sec/LOS F	0.75/LOS C	>50.0 sec/LOS F	0.85/LOS D

As shown, the intersection would operate in the LOS B range under project-specific conditions, thereby mitigating the project's project-specific impact. Under cumulative plus project conditions, the intersection level of service would be improved from LOS F to LOS C/D. To improve the level of service to LOS C under cumulative conditions, Los Angeles Avenue will have to be widened to provide additional eastbound/westbound capacity. The project would pay it appropriate development traffic fees to contribute to the City's roadway network improvement program.

Per Caltrans request, operations of the Los Angeles Ave/Montair Dr intersection with a traffic signal were also evaluated pursuant HCM methodologies. Table 9 summarizes the intersection delay, level of service and queue lengths.

Table 9
Los Angeles Ave/Montair Dr Intersection
Mitigated AM and PM Peak Hour Levels of Service
HCM Methodology

Scenario	AM Peak Hour		PM Peak Hour	
	Mitigated Delay - LOS	**95th Percentile Queue**	**Mitigated Delay - LOS**	**95th Percentile Queue**
Existing + Project Conditions	8.1 sec/LOS A	EBL = 25' EBT = 175' WBT = 295' WBR = 20' SB = 25'	10.9 sec/LOS B	EBL = 20' EBT = 270' WBT = 485' WBR = 20' SB = 75'
Cumulative + Project Conditions	9.6 sec/LOS A	EBL = 25' EBT = 205' WBT = 490' WBR = 20' SB = 25'	13.6 sec/LOS B	EBL = 20' EBT = 650' WBT = 590' WBR = 20' SB = 90'

■ ■ ■

TECHNICAL APPENDIX

TABLE OF CONTENTS

Appendix 1 – AM and PM Peak Hour Intersection Counts

Appendix 2 – Cumulative Projects Trip Generation

Appendix 3 – Intersection Level of Service Calculation Worksheets

Appendix 4 – Traffic Signal Warrant Worksheets

Appendix 1

AM and PM Peak Hour Intersection Counts

Prepared by NDS/ATD

VOLUME

Montair Dr N/O E Los Angeles Ave

Day: Wednesday
Date: 10/13/2021

City: Moorpark
Project #: CA21_020302_001

DAILY TOTALS	NB	SB	EB	WB	Total
	765	779	0	0	1,544

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00	2		4						6		12:00	1		4						5	
00:15	0		1						1		12:15	3		8						11	
00:30	0		3						3		12:30	4		22						26	
00:45	1	3	5	13					6	16	12:45	6	14	53	87					59	101
01:00	1		8						9		13:00	7		6						13	
01:15	2		22						24		13:15	7		10						17	
01:30	1		11						12		13:30	19		4						23	
01:45	2	6	14	55					16	61	13:45	20	53	8	28					28	81
02:00	0		5						5		14:00	12		6						18	
02:15	0		6						6		14:15	28		6						34	
02:30	0		3						3		14:30	17		31						48	
02:45	1	1	2	16					3	17	14:45	27	84	37	80					64	164
03:00	9		26						35		15:00	5		17						22	
03:15	21		21						42		15:15	5		9						14	
03:30	63		2						65		15:30	8		11						19	
03:45	94	187	3	52					97	239	15:45	5	23	7	44					12	67
04:00	12		4						16		16:00	13		11						24	
04:15	1		1						2		16:15	23		46						69	
04:30	4		0						4		16:30	11		64						75	
04:45	3	20	0	5					3	25	16:45	8	55	37	158					45	213
05:00	1		0						1		17:00	4		9						13	
05:15	10		0						10		17:15	3		10						13	
05:30	23		1						24		17:30	2		8						10	
05:45	45	79	1	2					46	81	17:45	0	9	3	30					3	39
06:00	13		3						16		18:00	7		6						13	
06:15	3		0						3		18:15	4		3						7	
06:30	4		4						8		18:30	2		9						11	
06:45	6	26	19	26					25	52	18:45	2	15	3	21					5	36
07:00	14		3						17		19:00	2		7						9	
07:15	13		0						13		19:15	4		2						6	
07:30	17		1						18		19:30	3		3						6	
07:45	19	63	4	8					23	71	19:45	3	12	1	13					4	25
08:00	4		2						6		20:00	0		3						3	
08:15	6		3						9		20:15	2		0						2	
08:30	5		7						12		20:30	1		1						2	
08:45	10	25	3	15					13	40	20:45	1	4	1	5					2	9
09:00	3		5						8		21:00	3		8						11	
09:15	6		4						10		21:15	4		1						5	
09:30	2		1						3		21:30	8		2						10	
09:45	3	14	2	12					5	26	21:45	17	32	0	11					17	43
10:00	0		2						2		22:00	5		3						8	
10:15	3		4						7		22:15	2		2						4	
10:30	3		6						9		22:30	1		10						11	
10:45	3	9	9	21					12	30	22:45	1	9	17	32					18	41
11:00	5		2						7		23:00	3		7						10	
11:15	4		2						6		23:15	0		17						17	
11:30	6		4						10		23:30	0		6						6	
11:45	3	18	3	11					6	29	23:45	1	4	4	34					5	38
TOTALS		451		236						687	TOTALS		314		543						857
SPLIT %		65.6%		34.4%						44.5%	SPLIT %		36.6%		63.4%						55.5%

DAILY TOTALS	NB	SB	EB	WB	Total
	765	779	0	0	1,544

AM Peak Hour	03:15	01:00			03:00	PM Peak Hour	14:00	16:00			16:00
AM Pk Volume	190	55			239	PM Pk Volume	84	158			213
Pk Hr Factor	0.505	0.625			0.616	Pk Hr Factor	0.750	0.617			0.710
7 - 9 Volume	88	23	0	0	111	4 - 6 Volume	64	188	0	0	252
7 - 9 Peak Hour	07:00	07:45			07:00	4 - 6 Peak Hour	16:00	16:00			16:00
7 - 9 Pk Volume	63	16	0	0	71	4 - 6 Pk Volume	55	158	0	0	213
Pk Hr Factor	0.829	0.571	0.000	0.000	0.772	Pk Hr Factor	0.598	0.617	0.000	0.000	0.710

Prepared by NDS/ATD

VOLUME

E Los Angeles Ave E/O Montair Dr

Day: Wednesday
Date: 10/13/2021

City: Moorpark
Project #: CA21_020302_002

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	10,470	10,663	21,133

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			12		19		31		12:00			123		172		295	
00:15			8		7		15		12:15			117		147		264	
00:30			16		10		26		12:30			145		139		284	
00:45			6	42	10	46	16	88	12:45			182	567	145	603	327	1170
01:00			9		7		16		13:00			154		164		318	
01:15			20		7		27		13:15			152		153		305	
01:30			11		6		17		13:30			145		145		290	
01:45			13	53	6	26	19	79	13:45			173	624	142	604	315	1228
02:00			9		6		15		14:00			146		169		315	
02:15			10		9		19		14:15			155		191		346	
02:30			11		6		17		14:30			194		176		370	
02:45			6	36	5	26	11	62	14:45			247	742	181	717	428	1459
03:00			20		13		33		15:00			168		175		343	
03:15			19		26		45		15:15			198		193		391	
03:30			12		39		51		15:30			197		192		389	
03:45			22	73	68	146	90	219	15:45			166	729	223	783	389	1512
04:00			19		27		46		16:00			179		232		411	
04:15			19		30		49		16:15			212		192		404	
04:30			32		43		75		16:30			215		195		410	
04:45			54	124	32	132	86	256	16:45			267	873	182	801	449	1674
05:00			64		57		121		17:00			238		196		434	
05:15			73		88		161		17:15			246		219		465	
05:30			109		119		228		17:30			225		252		477	
05:45			135	381	132	396	267	777	17:45			191	900	199	866	390	1766
06:00			113		131		244		18:00			194		191		385	
06:15			115		136		251		18:15			172		156		328	
06:30			141		185		326		18:30			155		156		311	
06:45			160	529	178	630	338	1159	18:45			96	617	138	641	234	1258
07:00			176		205		381		19:00			148		122		270	
07:15			172		191		363		19:15			118		104		222	
07:30			202		205		407		19:30			100		81		181	
07:45			236	786	162	763	398	1549	19:45			78	444	85	392	163	836
08:00			180		181		361		20:00			56		75		131	
08:15			182		167		349		20:15			57		70		127	
08:30			212		192		404		20:30			51		69		120	
08:45			178	752	211	751	389	1503	20:45			52	216	73	287	125	503
09:00			151		141		292		21:00			59		62		121	
09:15			128		138		266		21:15			51		82		133	
09:30			130		143		273		21:30			55		67		122	
09:45			121	530	132	554	253	1084	21:45			44	209	63	274	107	483
10:00			125		118		243		22:00			37		35		72	
10:15			116		107		223		22:15			35		41		76	
10:30			141		115		256		22:30			42		33		75	
10:45			138	520	139	479	277	999	22:45			32	146	26	135	58	281
11:00			106		134		240		23:00			23		28		51	
11:15			128		138		266		23:15			30		20		50	
11:30			112		129		241		23:30			19		19		38	
11:45			146	492	123	524	269	1016	23:45			13	85	20	87	33	172
TOTALS				4318		4473		**8791**	**TOTALS**				6152		6190		**12342**
SPLIT %				49.1%		50.9%		**41.6%**	**SPLIT %**				49.8%		50.2%		**58.4%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	10,470	10,663	21,133

AM Peak Hour				07:45	06:45	**07:00**	**PM Peak Hour**				16:45	17:00	**16:45**
AM Pk Volume				810	779	**1549**	**PM Pk Volume**				976	866	**1825**
Pk Hr Factor				0.858	0.950	**0.951**	**Pk Hr Factor**				0.914	0.859	**0.956**
7 - 9 Volume	0	0		1538	1514	**3052**	**4 - 6 Volume**	0	0		1773	1667	**3440**
7 - 9 Peak Hour				07:45	07:00	**07:00**	**4 - 6 Peak Hour**				16:45	17:00	**16:45**
7 - 9 Pk Volume	0	0		810	763	**1549**	**4 - 6 Pk Volume**	0	0		976	866	**1825**
Pk Hr Factor	0.000	0.000		0.858	0.930	**0.951**	**Pk Hr Factor**	0.000	0.000		0.914	0.859	**0.956**

Prepared by National Data & Surveying Services

Grimes Canyon Rd & Los Angeles Ave

Peak Hour Turning Movement Count

ID: 19-05109-010
City: Moorpark

Day: Thursday
Date: 04/18/2019

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	07:00 AM - 10:00 AM
NONE	NONE
04:45 PM - 05:45 PM	04:30 PM - 07:30 PM

Grimes Canyon Rd — SOUTHBOUND

AM	114	0	67	0	114	AM
NOON	0	0	0	0	0	NOON
PM	81	0	23	0	167	PM

Los Angeles Ave — EASTBOUND

AM	NOON	PM	
851	0	993	⇦
0	0	0	0 ↶
92	0	138	1 ↱
892	0	944	1 →
0	0	0	0 ↷
AM	NOON	PM	

Los Angeles Ave — WESTBOUND

PM	NOON	AM	
29	0	22	1 ↰
912	0	737	1 ←
0	0	0	0 ↶
0	0	0	0 ↷
967	0	959	⇨
PM	NOON	AM	

PM	0	0	0	0	0	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM

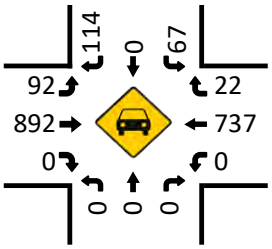
Grimes Canyon Rd — NORTHBOUND

	0 ↶	1 ↰	0 ↑	0 ↱

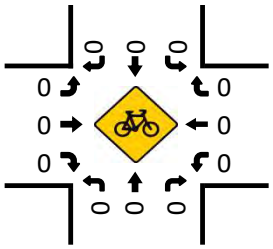
CONTROL: Signalized

TEV	1924 AM	0 NOON	2127 PM
PHF	0.92		0.93

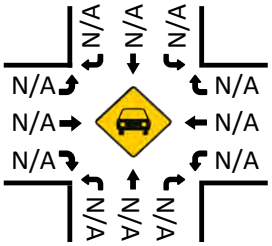
Total Vehicles (AM)



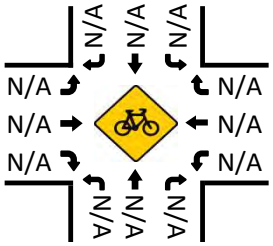
Bikes (AM)



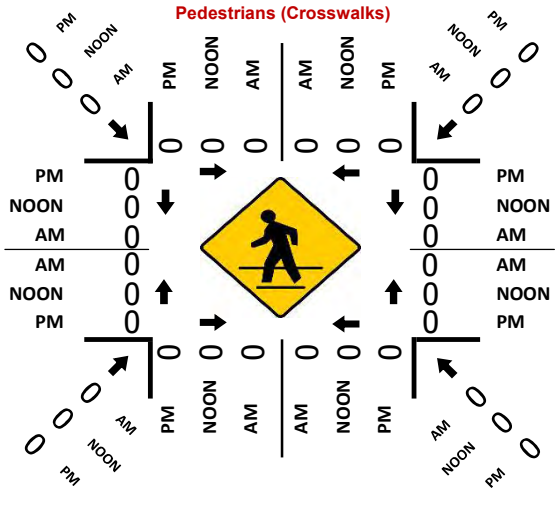
Total Vehicles (Noon)



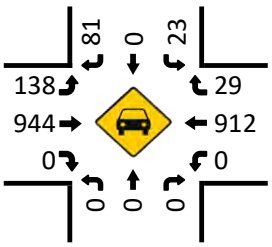
Bikes (NOON)



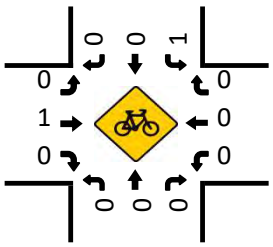
Pedestrians (Crosswalks)



Total Vehicles (PM)



Bikes (PM)



Prepared by National Data & Surveying Services

Montair Dr & E Los Angeles Ave

Peak Hour Turning Movement Count

ID: 21-20303-001
City: Moorpark

Day: Wednesday
Date: 10/13/2021

PEAK HOURS	
AM	07:00 AM - 08:00 AM
NOON	NONE
PM	04:45 PM - 05:45 PM

COUNT PERIODS	
AM	07:00 AM - 10:00 AM
NOON	NONE
PM	04:00 PM - 07:00 PM

Montair Dr — SOUTHBOUND

AM	3	0	5	0	63	AM
NOON	0	0	0	0	0	NOON
PM	23	0	40	1	17	PM

E Los Angeles Ave — EASTBOUND

AM	NOON	PM		
715	0	859	⇦	
0	0	0	↶	0
13	0	6	↱	1
780	0	936	→	1
0	0	0	↷	0
AM	NOON	PM		

E Los Angeles Ave — WESTBOUND

PM	NOON	AM		
10	0	50	↰	1
836	0	712	←	1
0	0	0	↰	0
0	0	0	↶	0
976	0	785	⇨	
PM	NOON	AM		

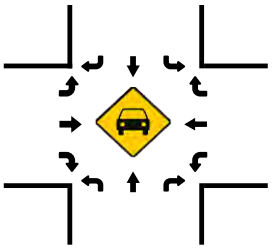
	0	1	0	0
	0	0	0	0

CONTROL			
1-Way Stop(SB)			
TEV	1563	0	1852
	AM	NOON	PM
PHF	0.96		0.96

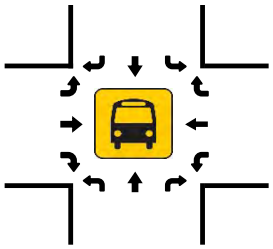
Montair Dr — NORTHBOUND

PM	0	0	0	0	0	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM

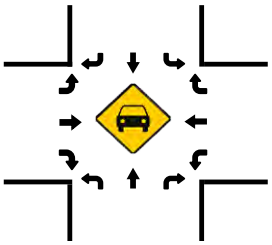
Total Vehicles (AM)



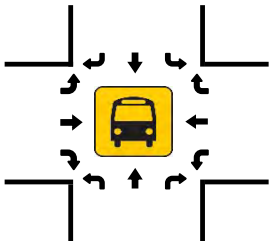
Total Vehicles (AM)



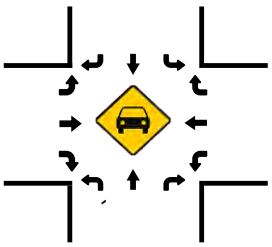
Total Vehicles (NOON)



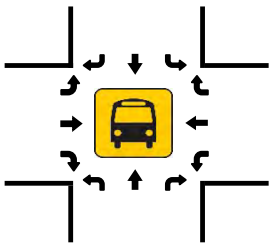
Total Vehicles (NOON)



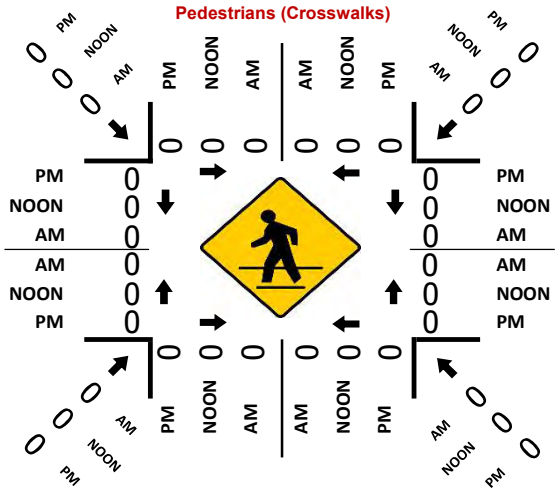
Total Vehicles (PM)



Total Vehicles (PM)



Pedestrians (Crosswalks)



Prepared by National Data & Surveying Services

Tierra Rejada Rd & Los Angeles Ave

Peak Hour Turning Movement Count

ID: 19-05109-011
City: Moorpark

Day: Thursday
Date: 04/18/2019

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	07:00 AM - 10:00 AM
NONE	NONE
04:45 PM - 05:45 PM	04:30 PM - 07:30 PM

Tierra Rejada Rd — SOUTHBOUND

AM	91	225	45	0	356	AM
NOON	0	0	0	0	0	NOON
PM	117	168	44	0	211	PM

Los Angeles Ave — EASTBOUND

AM	NOON	PM		
895	0	989		
0	0	0	0	
101	0	89	1	
728	0	720	2	
240	0	248	1	
AM	NOON	PM		

CONTROL

Signalized

TEV	3406 AM	0 NOON	3047 PM
PHF	0.83		0.99

WESTBOUND — Los Angeles Ave

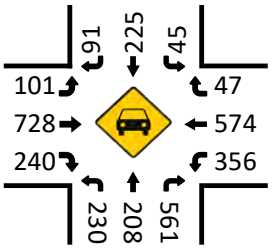
				PM	NOON	AM
			1	30	0	47
			2	743	0	574
			2	321	0	356
			0	0	0	0
				1110	0	1334
PM	NOON	AM				

Tierra Rejada Rd — NORTHBOUND

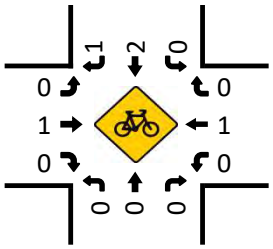
PM	737	0	129	92	346	PM
NOON	0	0	0	0	0	NOON
AM	821	0	230	208	561	AM

0 1 1 1

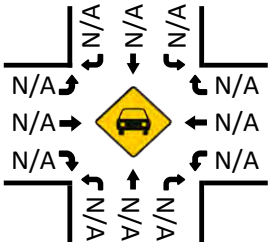
Total Vehicles (AM)



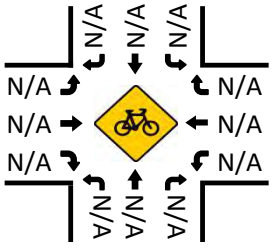
Bikes (AM)



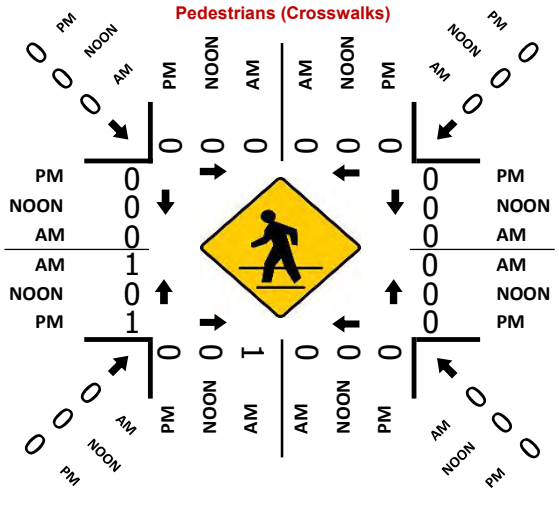
Total Vehicles (Noon)



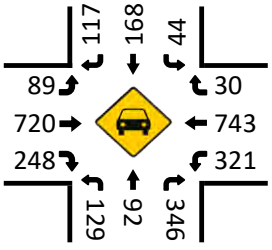
Bikes (NOON)



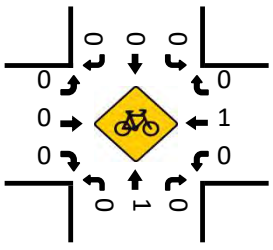
Pedestrians (Crosswalks)



Total Vehicles (PM)



Bikes (PM)



Prepared by National Data & Surveying Services

Moorpark Ave & Los Angeles Ave

Peak Hour Turning Movement Count

ID: 19-05109-012
City: Moorpark

Day: Thursday
Date: 04/18/2019

PEAK HOURS	COUNT PERIODS
07:45 AM - 08:45 AM	07:00 AM - 10:00 AM
NONE	NONE
04:45 PM - 05:45 PM	04:30 PM - 07:30 PM

Moorpark Ave — SOUTHBOUND

AM	105	44	164	0	348	AM
NOON	0	0	0	0	0	NOON
PM	94	112	195	0	340	PM

Los Angeles Ave — EASTBOUND

AM	NOON	PM		
999	0	1089	⇦	
0	0	0	↶	0
141	0	148	↱	1
968	0	934	→	3
41	0	55	↳	0
AM	NOON	PM		

Los Angeles Ave — WESTBOUND

PM	NOON	AM		
109	0	121	↰	1
949	0	830	←	2
269	0	99	↰	1
0	0	0	↶	0
1261	0	1235	⇨	
PM	NOON	AM		

Moorpark Ave — NORTHBOUND

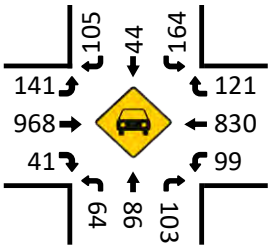
PM	436	0	46	83	132	PM
NOON	0	0	0	0	0	NOON
AM	184	0	64	86	103	AM

⇩	↶	↰	↑	↱
	0	1.5	0.5	1

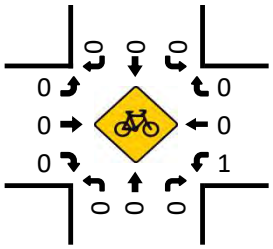
⇧	↶	↱	→	↳
	1.3	0.3	1.3	0

CONTROL			
Signalized			
TEV	2766 AM	0 NOON	3126 PM
PHF	0.91		0.98

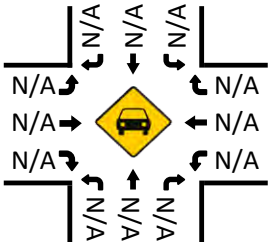
Total Vehicles (AM)



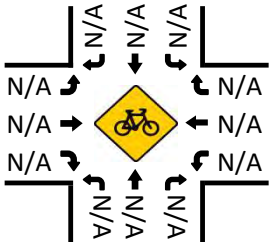
Bikes (AM)



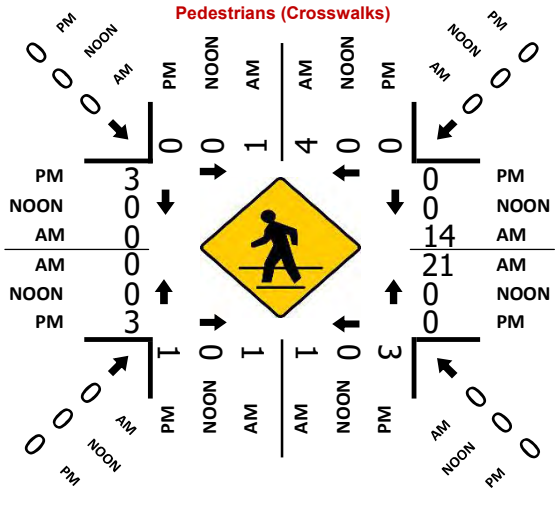
Total Vehicles (Noon)



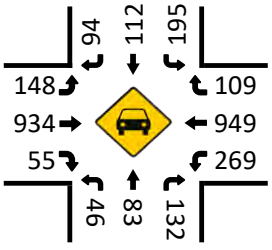
Bikes (NOON)



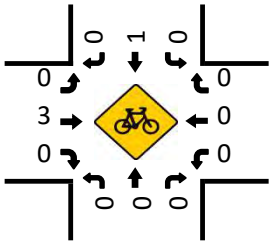
Pedestrians (Crosswalks)



Total Vehicles (PM)



Bikes (PM)



Prepared by National Data & Surveying Services

Spring Rd & Los Angeles Ave

Peak Hour Turning Movement Count

ID: 19-05109-013
City: Moorpark

Day: Thursday
Date: 04/18/2019

PEAK HOURS

AM	07:45 AM - 08:45 AM
NOON	NONE
PM	04:45 PM - 05:45 PM

COUNT PERIODS

AM	07:00 AM - 10:00 AM
NOON	NONE
PM	04:30 PM - 07:30 PM

SOUTHBOUND — Spring Rd

AM	101	295	564	0	675	AM
NOON	0	0	0	0	0	NOON
PM	91	202	363	0	1095	PM

1 1 2 0

EASTBOUND — Los Angeles Ave

AM	NOON	PM		
1029	0	1354	⇦	
0	0	0	↶	0
161	0	152	↱	2
855	0	907	→	2
160	0	167	↳	1
AM	NOON	PM		

CONTROL

Signalized

TEV	3671	0	4186
	AM	NOON	PM
PHF	0.96		0.96

WESTBOUND — Los Angeles Ave

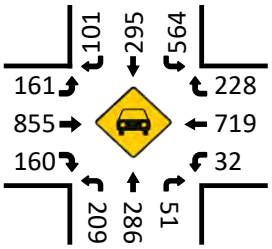
PM	NOON	AM		
655	0	228	↰	1
1051	0	719	←	2
45	0	32	↰	1
5	0	10	↶	0
1323	0	1480	⇨	
PM	NOON	AM		

0 2 1.5 0

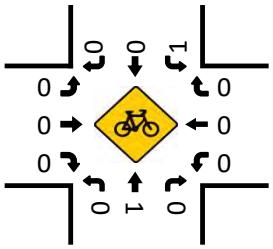
NORTHBOUND — Spring Rd

PM	414	0	212	288	48	PM
NOON	0	0	0	0	0	NOON
AM	487	0	209	286	51	AM

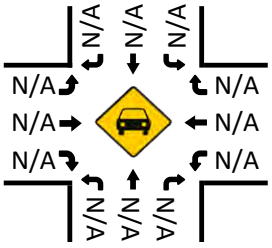
Total Vehicles (AM)



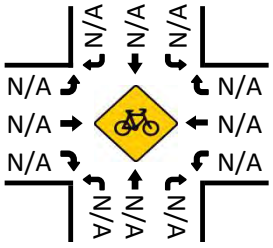
Bikes (AM)



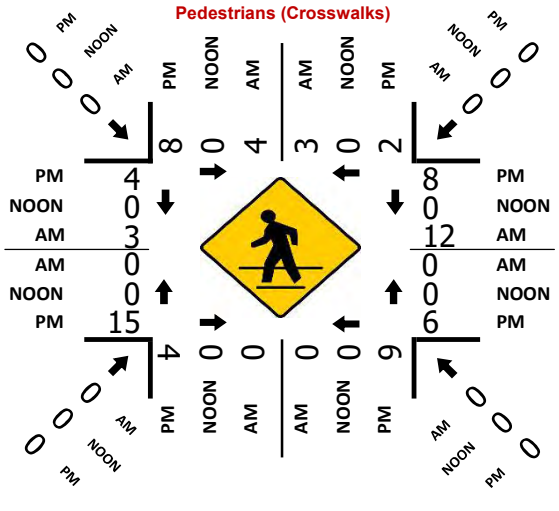
Total Vehicles (Noon)



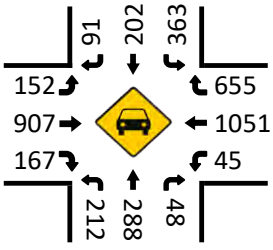
Bikes (NOON)



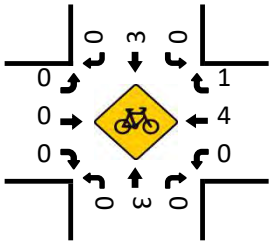
Pedestrians (Crosswalks)



Total Vehicles (PM)



Bikes (PM)



Prepared by National Data & Surveying Services

Miller Pkwy/Science Dr & Los Angeles Ave

Peak Hour Turning Movement Count

ID: 19-05109-014
City: Moorpark

Day: Thursday
Date: 04/18/2019

PEAK HOURS		COUNT PERIODS
AM	07:45 AM - 08:45 AM	07:00 AM - 10:00 AM
NOON	NONE	NONE
PM	04:30 PM - 05:30 PM	04:30 PM - 07:30 PM

Miller Pkwy/Science Dr — SOUTHBOUND

AM	15	1	10	0	178	AM
NOON	0	0	0	0	0	NOON
PM	40	17	108	0	34	PM

Los Angeles Ave — EASTBOUND

AM	NOON	PM	
1096	0	1837	
1	0	9	0
54	0	13	1
1342	0	1235	3
107	0	109	1

Los Angeles Ave — WESTBOUND

PM	NOON	AM	
17	0	114	1
1587	0	1021	3
101	0	68	2
0	0	0	0
1426	0	1410	

Miller Pkwy/Science Dr — NORTHBOUND

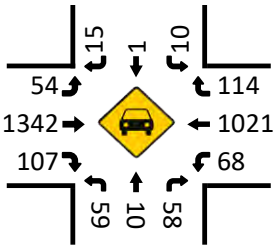
PM	230	3	201	4	83	PM
NOON	0	0	0	0	0	NOON
AM	176	0	59	10	58	AM

Turning movements (EB): 0.3 | 0.3 | 0.3 | 0
Turning movements (WB): 1 | 3 | 2 | 0
Turning movements (NB): 0 | 2 | 1 | 1

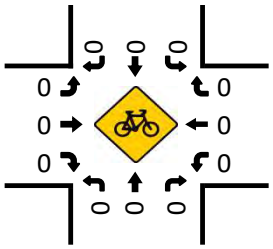
CONTROL: Signalized

TEV	2860	0	3527
	AM	NOON	PM
PHF	0.96		0.98

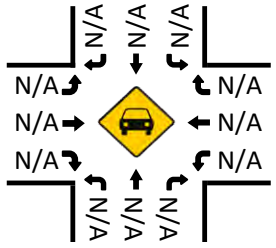
Total Vehicles (AM)



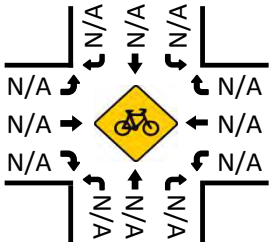
Bikes (AM)



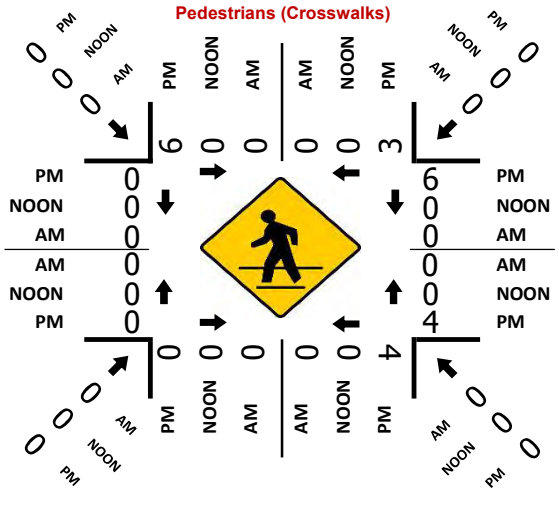
Total Vehicles (Noon)



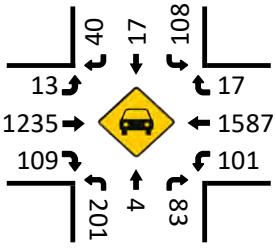
Bikes (NOON)



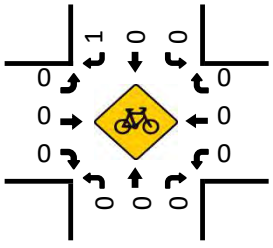
Pedestrians (Crosswalks)



Total Vehicles (PM)



Bikes (PM)



Prepared by National Data & Surveying Services

SR-23 SB Ramps & Los Angeles Ave

Peak Hour Turning Movement Count

ID: 19-05109-015
City: Moorpark

Day: Thursday
Date: 04/18/2019

PEAK HOURS	COUNT PERIODS
07:45 AM - 08:45 AM	07:00 AM - 10:00 AM
NONE	NONE
04:30 PM - 05:30 PM	04:30 PM - 07:30 PM

SR-23 SB Ramps — SOUTHBOUND

	L	T	R	U		
AM	842	2	28	0	0	AM
NOON	0	0	0	0	0	NOON
PM	897	0	37	0	0	PM

Los Angeles Ave — EASTBOUND

	L	T	R	U		
AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM
AM	1324	0	1886			
NOON	0	0	0			
PM	755	0	761			
AM	728	0	666			

Los Angeles Ave — WESTBOUND

	L	T	R	U		
AM	0	0	0	0	0	PM
NOON	989	0	482	0	1	NOON
PM	27	0	2	0	1	AM
AM	0	0	0	0	0	PM
NOON	798	0	783			
PM	693	0	0	0	0	PM
NOON	0	0	0	0	0	NOON
AM	732	0	0	0	0	AM

SR-23 SB Ramps — NORTHBOUND

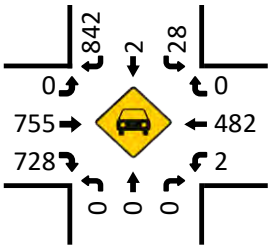
	L	T	R	U		
AM	1	0	1	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

CONTROL

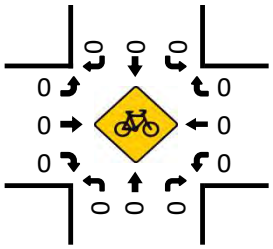
Signalized

TEV	2839 AM	0 NOON	3377 PM
PHF	0.94		0.97

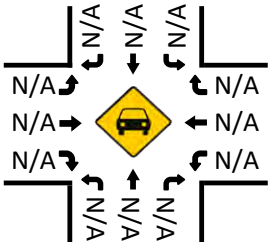
Total Vehicles (AM)



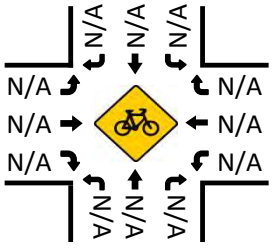
Bikes (AM)



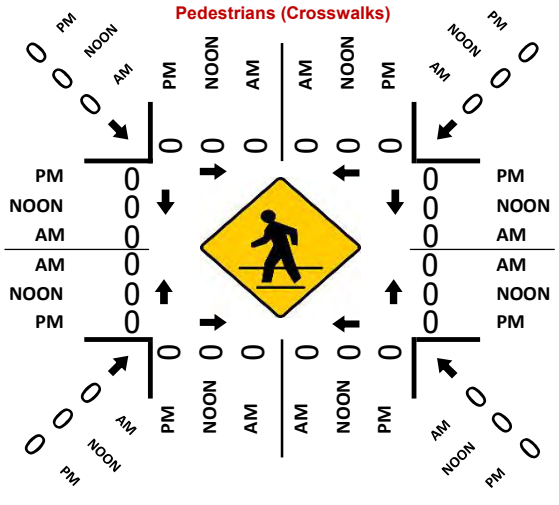
Total Vehicles (Noon)



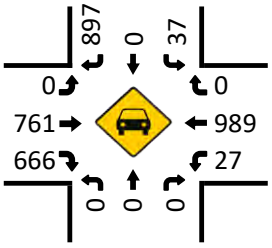
Bikes (NOON)



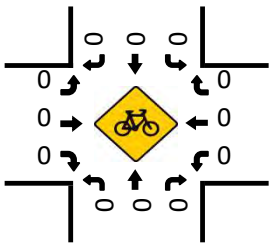
Pedestrians (Crosswalks)



Total Vehicles (PM)



Bikes (PM)



Prepared by National Data & Surveying Services

SR-23 NB Ramps & Los Angeles Ave

Peak Hour Turning Movement Count

ID: 19-05109-016
City: Moorpark

Day: Thursday
Date: 04/18/2019

PEAK HOURS

AM: 07:30 AM - 08:30 AM
NOON: NONE
PM: 04:30 PM - 05:30 PM

COUNT PERIODS

AM: 07:00 AM - 10:00 AM
NOON: NONE
PM: 04:30 PM - 07:30 PM

SR-23 NB Ramps — SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

Los Angeles Ave — EASTBOUND

AM	NOON	PM		
506	0	1029	⇦	
0	0	0	↶	0
0	0	0	↱	0
43	0	21	→	2
711	0	770	↷	2
AM	NOON	PM		

WESTBOUND — Los Angeles Ave

PM	NOON	AM		
0	0	0	↶	0
72	0	11	←	1
34	0	3	↰	0
0	0	0	↷	0
30	0	79	⇨	
PM	NOON	AM		

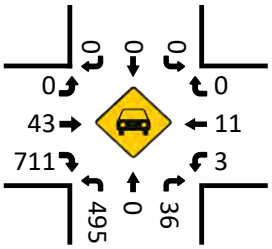
CONTROL: Signalized

TEV	1299 AM	0 NOON	1863 PM
PHF	0.86		0.92

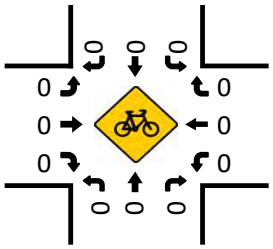
	0	2	0	1	
PM	804	0	957	0	9	PM
NOON	0	0	0	0	0	NOON
AM	714	0	495	0	36	AM

NORTHBOUND — SR-23 NB Ramps

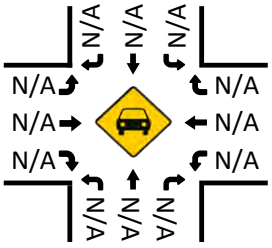
Total Vehicles (AM)



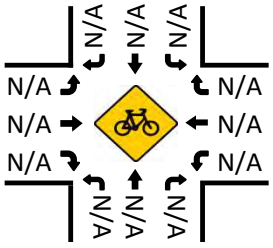
Bikes (AM)



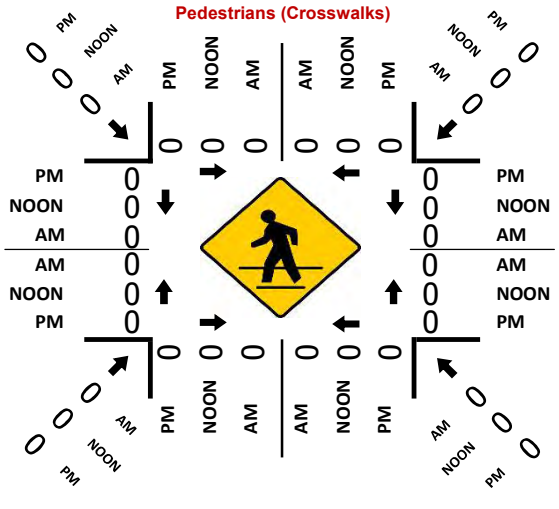
Total Vehicles (Noon)



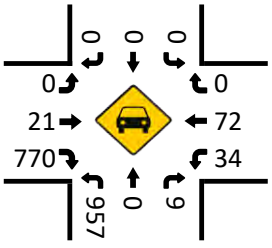
Bikes (NOON)



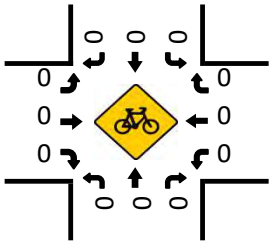
Pedestrians (Crosswalks)



Total Vehicles (PM)



Bikes (PM)



Prepared by National Data & Surveying Services

Spring Rd & Tierra Rejada Rd

Peak Hour Turning Movement Count

ID: 19-05109-023
City: Moorpark

Day: Thursday
Date: 04/04/2019

PEAK HOURS

AM	07:30 AM - 08:30 AM
NOON	NONE
PM	04:30 PM - 05:30 PM

COUNT PERIODS

AM	07:00 AM - 10:00 AM
NOON	NONE
PM	04:30 PM - 07:30 PM

Spring Rd — SOUTHBOUND

AM	73	0	569	0	383	AM
NOON	0	0	0	0	0	NOON
PM	89	0	319	0	606	PM

	1	0	2	0

Tierra Rejada Rd — EASTBOUND

AM	NOON	PM		
740	0	1195	⇦	
0	0	0	↩	0
109	0	81	↱	1
1247	0	739	→	2
0	0	0	↳	0
AM	NOON	PM		

Tierra Rejada Rd — WESTBOUND

PM	NOON	AM		
525	0	274	↰	1
1106	0	667	←	2
0	0	0	↰	0
0	0	0	↩	0
1058	0	1816	⇨	
PM	NOON	AM		

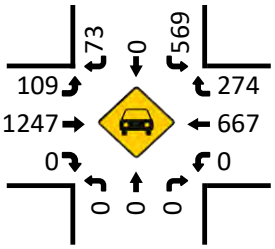
CONTROL			
Signalized			
TEV	2939	0	2859
	AM	NOON	PM
PHF	0.92		0.96

	0	0	0	0

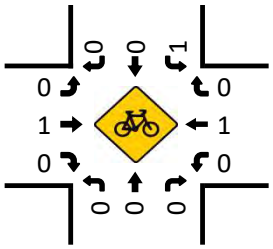
Spring Rd — NORTHBOUND

PM	0	0	0	0	0	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM

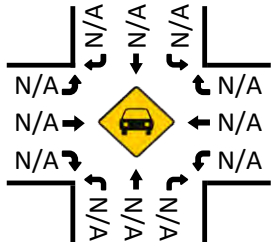
Total Vehicles (AM)



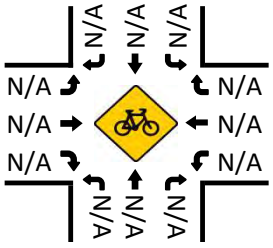
Bikes (AM)



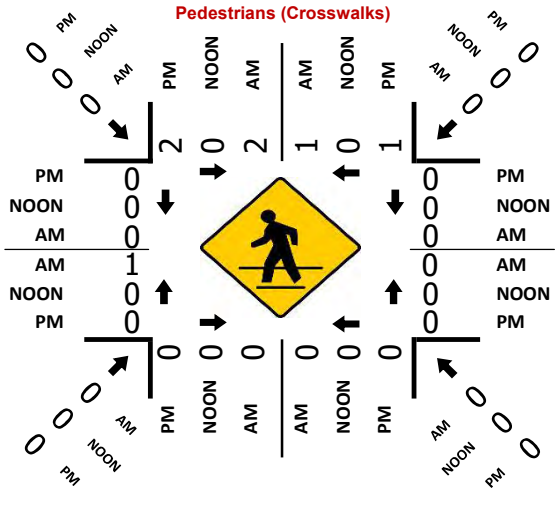
Total Vehicles (Noon)



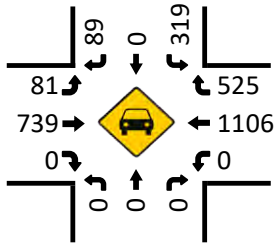
Bikes (NOON)



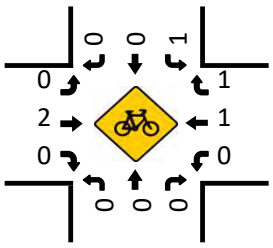
Pedestrians (Crosswalks)



Total Vehicles (PM)



Bikes (PM)



Prepared by National Data & Surveying Services

Moorpark Rd/Miller Pkwy & Tierra Rejada Rd

Peak Hour Turning Movement Count

ID: 19-05109-024
City: Moorpark

Day: Thursday
Date: 04/04/2019

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	07:00 AM - 10:00 AM
NONE	NONE
04:30 PM - 05:30 PM	04:30 PM - 07:30 PM

Moorpark Rd/Miller Pkwy — SOUTHBOUND

AM	111	2	146	0	153	AM
NOON	0	0	0	0	0	NOON
PM	101	0	115	0	237	PM

EASTBOUND — Tierra Rejada Rd

AM	NOON	PM		
942	0	1655		
0	0	0	0	
87	0	61	1	
1106	0	765	2	
639	0	243	1	
AM	NOON	PM		

WESTBOUND — Tierra Rejada Rd

PM	NOON	AM		
174	0	66	1	
1071	0	630	2	
557	0	720	2	
0	0	0	0	
1631	0	1753		
PM	NOON	AM		

CONTROL

Signalized

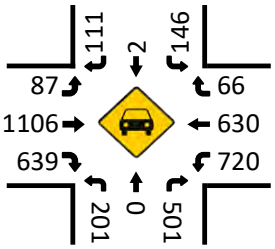
TEV	4209 AM	0 NOON	4323 PM
PHF	0.98		0.96

NORTHBOUND — Moorpark Rd/Miller Pkwy

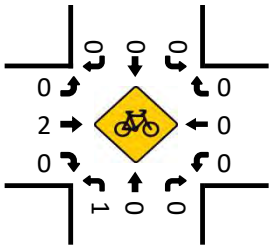
PM	800	0	483	2	751	PM
NOON	0	0	0	0	0	NOON
AM	1361	0	201	0	501	AM

Turning movements: 1 0 1 0 | 0 2 0 2

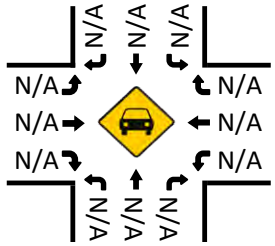
Total Vehicles (AM)



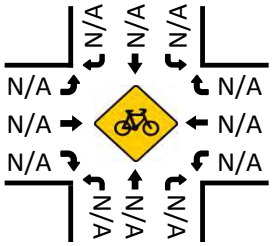
Bikes (AM)



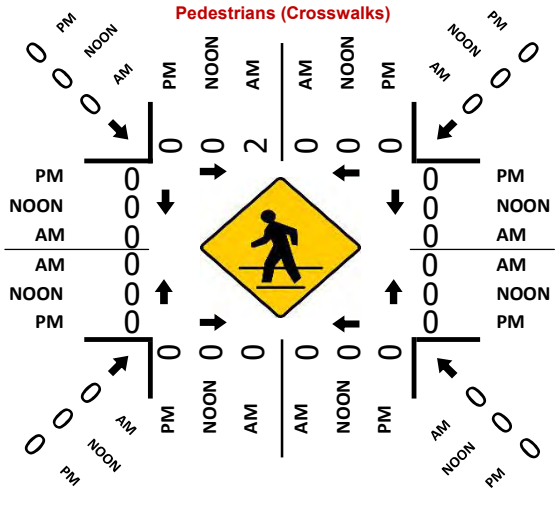
Total Vehicles (Noon)



Bikes (NOON)



Pedestrians (Crosswalks)


PM
NOON
AM
0
0
2
0
0
0
0

Prepared by National Data & Surveying Services

SR-23 SB Ramps & Tierra Rejada Rd

Peak Hour Turning Movement Count

ID: 19-05109-025
City: Moorpark

Day: Thursday
Date: 04/25/2019

PEAK HOURS

AM	07:30 AM - 08:30 AM
NOON	NONE
PM	04:30 PM - 05:30 PM

COUNT PERIODS

AM	07:00 AM - 10:00 AM
NOON	NONE
PM	04:30 PM - 07:30 PM

SR-23 SB Ramps — SOUTHBOUND

AM	395	0	35	0	495 AM
NOON	0	0	0	0	0 NOON
PM	616	0	177	0	202 PM

Tierra Rejada Rd — EASTBOUND

AM	NOON	PM	
1320	0	1772	
0	0	0	0
0	0	0	0
1006	0	1286	3
883	0	421	1

WESTBOUND — Tierra Rejada Rd

PM	NOON	AM	
202	0	495	1
1156	0	925	2
0	0	0	0
1	0	0	0
1464	0	1041	

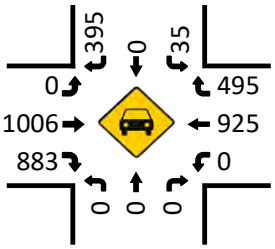
NORTHBOUND — SR-23 SB Ramps

PM	421	0	0	0	0 PM
NOON	0	0	0	0	0 NOON
AM	883	0	0	0	0 AM

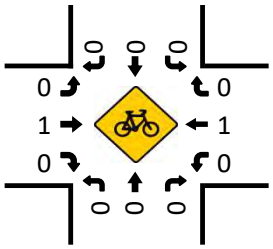
CONTROL: Signalized

	AM	NOON	PM
TEV	3739	0	3859
PHF	0.96		0.93

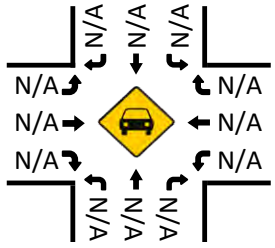
Total Vehicles (AM)



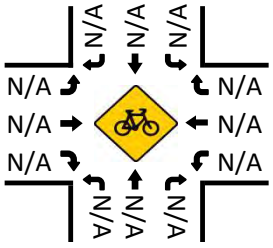
Bikes (AM)



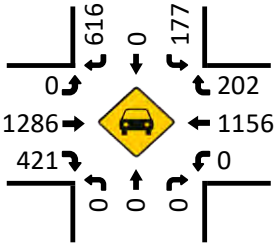
Total Vehicles (Noon)



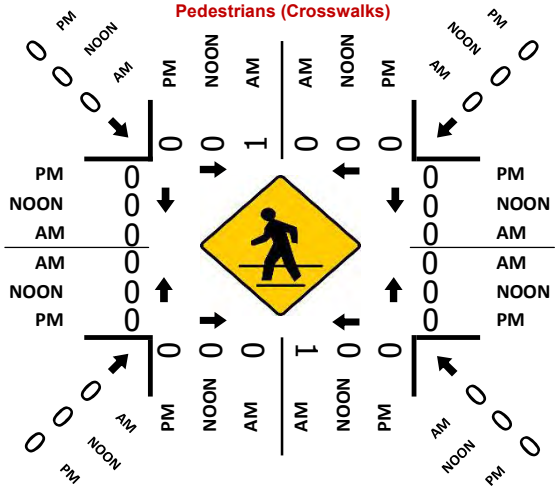
Bikes (NOON)



Total Vehicles (PM)



Pedestrians (Crosswalks)


PM
NOON
AM
0
0
0
1
0
0
0
0
0
0

Prepared by National Data & Surveying Services

SR-23 NB Ramps & Tierra Rejada Rd

Peak Hour Turning Movement Count

ID: 19-05109-026
City: Moorpark

Day: Thursday
Date: 04/25/2019

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	07:00 AM - 10:00 AM
NONE	NONE
04:45 PM - 05:45 PM	04:30 PM - 07:30 PM

SR-23 NB Ramps — SOUTHBOUND

AM	0	0	0	0	62	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	75	PM

Tierra Rejada Rd — EASTBOUND

AM	NOON	PM		
1408	0	1383	⇦	
0	0	0	↶	0
0	0	0	↱	0
507	0	1187	→	2
551	0	270	↴	1
AM	NOON	PM		

CONTROL

Signalized

TEV	2701	0	3605
	AM	NOON	PM
PHF	0.93		0.93

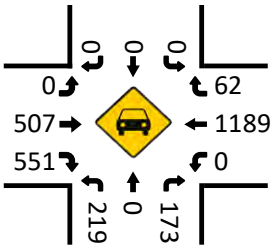
Tierra Rejada Rd — WESTBOUND

PM	NOON	AM		
75	0	62	↰	1
762	0	1189	←	2
0	0	0	↰	0
0	0	0	↰	0
1877	0	680	⇨	
PM	NOON	AM		

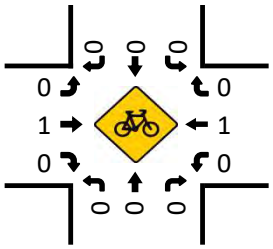
SR-23 NB Ramps — NORTHBOUND

PM	270	0	621	0	690	PM
NOON	0	0	0	0	0	NOON
AM	551	0	219	0	173	AM
		0	1.5	0	0.5	

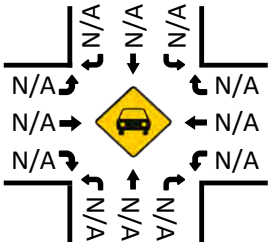
Total Vehicles (AM)



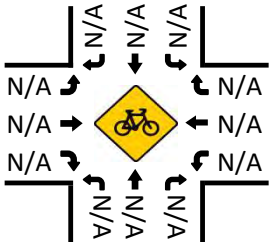
Bikes (AM)



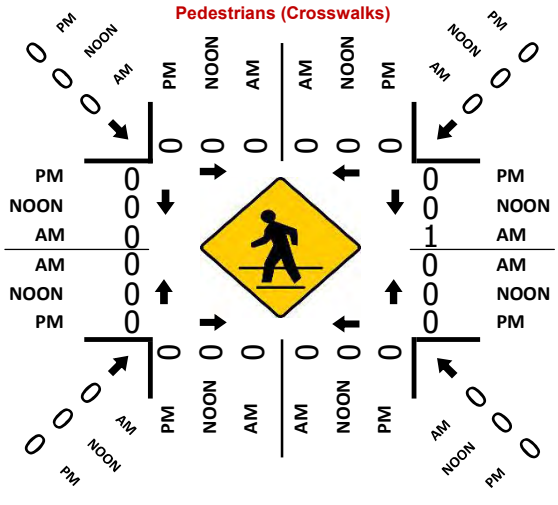
Total Vehicles (Noon)



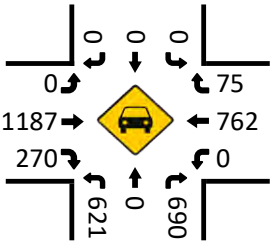
Bikes (NOON)



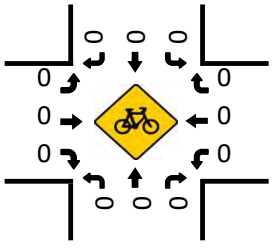
Pedestrians (Crosswalks)



Total Vehicles (PM)



Bikes (PM)



Appendix 2
Cumulative Projects Trip Generation

Cumulative Development Projects Trip Generation

Project	Land Use	Size	ADT	A.M. Peak Hour	P.M. Peak Hour	Note
Triliad Development	Movie Studio	37 Acres	3,108	174	168	Approved
Pacific Communities	Single Family Residential	283 Units	2,694	212	283	Approved
Essex Moorpark, LLC	Multi-Family Residential	200 Units	1,318	92	57	Approved
Spring Road, LLC	Condominiums	95 Units	552	42	49	Approved
City Ventures	Single Family Residential	110 Units	1,047	82	110	Approved
Oakmont Senior Living	Senior Residential	77 units/beds	170	6	14	Approved/Under Construction
Birdsall Group, LLC	Single Family Residential	21 Units	200	16	12	Approved
Aldersgate Senior Housing	Senior Residential	390 Units	1,468	90	125	Approved
High Street Depot/Daly Group	Downtown Mixed-Use	13,656 sf retail and 79 apartments	1,725	78	147	Approved
Grand Moorpark/Kozar	Condominiums	63 Units	383	29	34	Approved
John C. Chiu, FLP-N	Condominiums	60 Units	349	26	31	Proposed
Beltramo Ranch	Single Family Res	52 units	490	36	49	Proposed
AHA Scattered Sites	Multi-family	56 units	377	22	29	Proposed
Hitch Ranch	Single and Multi-Family	755 units	6,327	453	585	Proposed
Moorpark 67/Rasmussen	Single Family Residential	139 Units	1,311	97	131	Proposed
**Amazon Distribution Center	Industrial	Reuse of 189,364 sf industrial	994	-17	12	Under Construction
*National Ready Mix	Batch Plant	10 acres	600	20	20	Unknown
***CEMEX	Quarry	N/A	980	276	148	Unknown
***Wayne J. Sand & Gravel	Quarry	N/A	504	92	34	Unknown
***Grimes Rock	Quarry	N/A	480	35	14	Unknown
Total Trips						

*No proposal to change or expand operations. Existing use creates significant truck traffic through Moorpark.

**Trip calculations include baseline of existing industrial use (site is developed). ADT is a gross figure and A.M./P.M. are net figures based on previous use.

***Operations under County jurisdiction but bring significant truck traffic through Moorpark. Please contact Ventura County to determine whether any active permits for expansion are being reviewed or processed.

City of Moorpark, Community Development Department
799 Moorpark Avenue, Moorpark, CA 93021, 805-517-6230
LAND USE AND DEVELOPMENT PROJECTS

QUARTERLY STATUS REPORT FOR JULY 2021

This Report is Available on the City's Webpage - www.moorparkca.gov

APPLICANT / DEVELOPER	COMMON PROJECT NAME	CASE PLANNER	SUBMITTAL DATE	APPLICATION COMPLETE OR INCOMPLETE	SITE ADDRESS OR LOCATION	PERMIT(S)	CEQA STATUS	APPLICATION STATUS	PROJECT DESCRIPTION	ACRES (APPX.)
RESIDENTIAL PROJECTS – IN REVIEW										
THE DALY GROUP VINCE DALY 31255 CEDAR VALLEY DRIVE #323 WESTLAKE VILLAGE, CA 91361 805-309-6100 vincedaly@icloud.com	HIGH STREET STATION	DOUG SPONDELLO dspondello@moorparkca.gov (805) 517-6251	09/6/2018	COMPLETE	226 HIGH STREET	RPD 2018-01 DA 2018-01 DDA 2018-01	MITIGATED NEGATIVE DECLARATION	APPROVED 10/7/20	79 APARTMENTS AND 13,656 SQUARE FEET COMMERCIAL MIXED USE	2.15
HITCH RANCH PARTNERS C/O DPS: DENNIS HARDGRAVE 651 VIA ALONDRA #714 CAMARILLO, CA 93012 805-484-8303 dennis@devplan.net COMSTOCK HOMES HARRIET RAPISTA 2301 ROSECRANS AVE #1150 EL SEGUNDO, CA 90245 310-546-5781 X235 Hrapista@Comstock-homes.com	HITCH RANCH SPECIFIC PLAN SPECIFIC PLAN AREA 1	DOUG SPONDELLO dspondello@moorparkca.gov (805) 517-6251	01/17/2019	INCOMPLETE	NORTH OF UNION PACIFIC RAILROAD TRACKS AND WEST OF TERMINUS OF CASEY ROAD	SP No. 1 / 2019-01 TTM 2019-01 RPD 2019-01 ZC 2019-01 GPA 2020-01 DA 2019-01	ENVIRONMENTAL IMPACT REPORT (IN PROCESS)	IN REVIEW PROCESS	SPECIFIC PLAN INCLUDING 755 SINGLE AND MULTI-FAMILY RESIDENCES, OPEN SPACE, MANUFACTURED SLOPES, DETENTION BASINS, PRIVATE RECREATION, PUBLIC PARK	277
JOHN C. CHIU, FLP-N C/O JOHN NEWTON 159 MOONSONG COURT MOORPARK, CA 93021 805-529-3494 newtoncnslt@msn.com	EVERETT STREET TERRACES	SHANNA FARLEY-JUDKINS sfarley-judkins@moorparkca.gov (805) 517-6236	12/05/2005	COMPLETE	NORTHEAST CORNER OF EVERETT STREET AND WALNUT CANYON ROAD	RPD 2005-02 GPA 2005-02 ZC 2005-02 TTM 5739 DA 2005-04 SPA No. 4 to DTSP 95-1	INITIAL STUDY (IN PROCESS)	IN REVIEW PROCESS	60 CONDOMINIUM RESIDENCES	2.43
WEST POINTE HOMES MOORPARK 67, LLC JAMES RASMUSSEN 26500 WEST AGOURA ROAD #652 CALABASAS, CA 91302 805-370-0165 james@rasmussendevelopment.com	NORTH RANCH	SARAH LEJEUNE slejeune@rinconconsultants.com	10/31/2016	INCOMPLETE	5979 GABBERT ROAD	RPD 2016-02 GPA 2016-02 ZC 2016-02 TTM 5847 VTTM 5847 DA 2016-02	INITIAL STUDY (IN PROCESS)	IN REVIEW PROCESS	134 SINGLE FAMILY HOMES AND 5 ESTATE LOTS	68.26
JOE OFTELIE WARMINGTON RESIDENTIAL 3090 PULLMAN STREET COSTA MESA, CA 92626 (714)557-5511 joftelie@warmingtongroup.com	BELTRAMO RANCH	PETER LYONS plyons@moorparkca.gov (818) 642-6458	06/04/2021	PENDING	SOUTH OF LOS ANGELES AVENUE, EAST OF TIERRA REJADA ROAD, AND WEST OF MAUREEN LANE	GPA 2021-01 DA 2021-01 ZCH 2021-01 VTTM 2021-01 RPD 2021-01	PENDING	IN REVIEW PROCESS	NEW RESIDENTIAL COMMUNITY CONSISTING OF 47 SINGLE-FAMILY DETACHED HOMES AND PROGRAMMED OPEN SPACE AREAS.	7.42

City of Moorpark, Community Development Department
799 Moorpark Avenue, Moorpark, CA 93021, 805-517-6230
LAND USE AND DEVELOPMENT PROJECTS
QUARTERLY STATUS REPORT FOR JULY 2021
This Report is Available on the City's Webpage - www.moorparkca.gov

APPLICANT / DEVELOPER	COMMON PROJECT NAME	CASE PLANNER	SUBMITTAL DATE	APPLICATION COMPLETE OR INCOMPLETE	SITE ADDRESS OR LOCATION	PERMIT(S)	CEQA STATUS	APPLICATION STATUS	PROJECT DESCRIPTION	ACRES (APPX.)
RESIDENTIAL PROJECTS – APPROVED, NOT YET UNDER CONSTRUCTION										
ALDERSGATE INVESTMENT, LLC ERNEST MANSI / MATT MANSI 300 ESPLANADE DRIVE #430 OXNARD, CA 93036 805-988-4114 ernie@aldersgatehome.com	CASEY ROAD SENIOR COMMUNITY	DOUG SPONDELLO dspondello@moorparkca.gov (805) 517-6251	09/3/2013	N/A	NORTH OF CASEY ROAD AND WEST OF WALNUT CANYON ROAD	RPD 2013-01 GPA 2013-02 ZC 2013-02 DA 2013-01	MITIGATED NEGATIVE DECLARATION	APPROVED 03/6/2019	390-UNIT SENIOR RETIREMENT COMMUNITY	50
BIRDSALL GROUP, LLC SCOTT BIRDSALL 2300 ALESSANDRO DRIVE VENTURA, CA 93001 805-643-3200 scott@birdsall.io	CANYON CREST	DOUG SPONDELLO dspondello@moorparkca.gov (805) 517-6251	08/13/2004	N/A	MARINE VIEW DRIVE, EAST OF WALNUT CANYON ROAD AT CHAMPIONSHIP DRIVE	RPD 2004-05 GPA 2004-03 ZC 2004-02 VTTM 5347 DA 2006-01	MITIGATED NEGATIVE DECLARATION	APPROVED 03/17/2006	21 SINGLE FAMILY RESIDENCES	42
CITY VENTURES MICHELLE THRAKULCHAVEE 3121 MICHELSON DRIVE #150 IRVINE, CA 92612 949-258-7536 michellet@cityventures.com	VISTAS AT MOORPARK	FREDDY CARRILLO fcarrillo@moorparkca.gov (805) 517-6224	05/06/1998	N/A	EAST OF WALNUT CANYON ROAD, NORTH OF WICKS ROAD	RPD 2014-01 GPA 1998-01 ZC 1998-01 VTTM 5130 DA 1998-03	MITIGATED NEGATIVE DECLARATION	APPROVED 03/18/2015	110 SINGLE FAMILY RESIDENCES	72
ESSEX MOORPARK, L.P. BOB LINDER 17461 DERIAN AVE #110 IRVINE, CA, 92614 949-929-8407 blinder@essex.com	ESSEX MOORPARK APARTMENTS	FREDDY CARRILLO fcarrillo@moorparkca.gov (805) 517-6224	09/24/2004	N/A	SOUTH OF CASEY ROAD AND WEST OF WALNUT CANYON ROAD	RPD 2012-02 GPA 2004-05 ZC 2004-04 DA	MITIGATED NEGATIVE DECLARATION	APPROVED 03/01/2017	200 APARTMENT RESIDENCES	11
			06/07/2021	N/A		FIRST AMENDMENT TO DA	EXEMPT	UNDER REVIEW	200 APARTMENT RESIDENCES ALL AFFORDABLE	
PACIFIC COMMUNITIES NELSON CHUNG 1000 DOVE STREET #100 NEWPORT BEACH, CA 92660 949-660-8988 nelson@pcbinc.com	PACIFIC ARROYO • VERBENA (Detached Townhouses) • FUCHSIA (Single-Family Detached)	SHANNA FARLEY-JUDKINS sfarley-judkins@moorparkca.gov (805) 517-6236	04/15/2016	N/A	SOUTH OF LOS ANGELES AVENUE AND EAST OF MAUREEN LANE	RPD 2016-01 GPA 2016-01 ZC 2016-01 VTTM 5882 DA 2016-01	MITIGATED NEGATIVE DECLARATION	APPROVED 09/20/2017	284 SINGLE FAMILY RESIDENCES	37.09
SPRING ROAD, LLC MIKE ASHLEY/DON DUNCAN 5300 WHITMAN ROAD, HIDDEN HILLS, CA 91302 818-888-6469 mike@aci5300.com	DUNCAN/ASHLEY 4875 SPRING ROAD	FREDDY CARRILLO fcarrillo@moorparkca.gov (805) 517-6224	11/17/2015	N/A	4875 SPRING ROAD AND 384 LOS ANGELES AVENUE	RPD 2015-02 GPA 2015-02 ZC 2015-03 VTTM 5972 DA 2015-01	MITIGATED NEGATIVE DECLARATION	APPROVED 12/06/2017	95 UNIT TOWNHOUSE CONDOMINIUM	8

City of Moorpark, Community Development Department
799 Moorpark Avenue, Moorpark, CA 93021, 805-517-6230
LAND USE AND DEVELOPMENT PROJECTS
QUARTERLY STATUS REPORT FOR JULY 2021
This Report is Available on the City's Webpage - www.moorparkca.gov

APPLICANT / DEVELOPER	COMMON PROJECT NAME	CASE PLANNER	SUBMITTAL DATE	APPLICATION COMPLETE OR INCOMPLETE	SITE ADDRESS OR LOCATION	PERMIT(S)	CEQA STATUS	APPLICATION STATUS	PROJECT DESCRIPTION	ACRES (APPX.)
MENASHE KOZAR 12725 VENTURA BLVD. SUITE D STUDIO CITY, CA 91604 818-927-4130 manny@summerlandpartners.com	GREEN ISLAND VILLAS	FREDDY CARRILLO fcarrillo@moorparkca.gov (805) 517-6224	10/10/2014	N/A	635 LOS ANGELES AVENUE	RPD 2014-02 GPA 2014-01 ZC 2014-01 TT 5869 DA 2014-03	NEGATIVE DECLARATION	APPROVED 02/19/2020	69 TOWNHOUSE CONDOMINIUMS	4
			11/13/2020	UNDER REVIEW		MOD 1 TO RPD 2014-02 FIRST AMENDMENT TO DA 2014-03	EXEMPT	MOD 1 TO RPD 2014-02 UNDER REVIEW	63 TOWNHOUSE CONDOMINIUMS	
RESIDENTIAL PROJECTS – UNDER CONSTRUCTION										
OAKMONT SENIOR LIVING ATTN: JAMES LAWSON, AICP 9240 OLD REDWOOD HIGHWAY, SUITE 200 WINDSOR, CA 95492 james.lawson@oakmontsl.com	OAKMONT SENIOR LIVING	DOUG SPONDELLO dspondello@moorparkca.gov (805) 517-6251	04/20/2018	N/A	13960 PEACH HILL ROAD	CPD 2018-01	MITIGATED NEGATIVE DECLARATION	UNDER CONSTRUCTION	77 UNIT SENIOR LIVING FACILITY	2.78
COMMERCIAL / INDUSTRIAL / OTHER PROJECTS – IN REVIEW										
ABDUL SALEHI 14711 DARTHMOUTH CIRCLE TUSTIN, CA 92780 (949) 701-3346 abdul.salehi@twc.com	13816 PRINCETON AVENUE	SHANNA FARLEY-JUDKINS sfarley-judkins@moorparkca.gov (805) 517-6236	08/05/2020	COMPLETE	13816 PRINCETON AVENUE	CPD 2020-01 CUP 2020-04	EXEMPT FROM CEQA	IN REVIEW	DEVELOP A 6,186 SQ. FT. AUTO REPAIR SHOP	0.57
DOUG HINRICHS 18831 BARDEEN AVENUE, ST 100 IRVINE, CA 92612 (949) 862-2135 Doug.hinrichs@hparchs.com	DCX6- AMAZON	PHILIP NEUMANN pneumann@moorparkca.gov (805) 517-6230	01/28/2020	COMPLETE	6000 CONDOR DRIVE	CUP 2020-01	MITIGATED NEGATIVE DECLARATION	APPROVED 05/25/2021	CONVERSION OF AN EXISTING INDUSTRIAL BUILDING INTO A 189,364 SQ.FT. DISTRIBUTION AND TRANSPORTATION FACILITY	11.78
SHIMON HEIDINGSFELD 6061 GABBERT ROAD MOORPARK, CA 93021 (805) 807-8634 Rabbi@jewishmoorpark.com	SYNAGOGUE AND JEWISH CENTER	FREDDY CARRILLO fcarrillo@moorparkca.gov (805) 517-6224	06/24/2020	INCOMPLETE	6061 GABBERT ROAD	CUP 2020-03	EXEMPT FROM CEQA	IN REVIEW PROCESS	SYNAGOGUE AND JEWISH CENTER	5.5
TOM SCHLENDER 774 WILDWOOD AVENUE THOUSAND OAKS, CA 91360 (805) 231-7300	WAREHOUSE DISCOUNT CENTER DEVELOPMENT AGREEMENT AMENDMENT	PETER LYONS plyons@moorparkca.gov (818) 642-6458	5/4/2020	N/A	14349 WHITE SAGE ROAD	AMENDMENT 1 TO DA 2004-02	PENDING	INITIAL STUDY (IN PROCESS)	DA AMENDMENT TO CONSIDER EXPANDED USES ALLOWED ON SITE	6.08

City of Moorpark, Community Development Department
799 Moorpark Avenue, Moorpark, CA 93021, 805-517-6230
LAND USE AND DEVELOPMENT PROJECTS
QUARTERLY STATUS REPORT FOR JULY 2021
This Report is Available on the City's Webpage - www.moorparkca.gov

APPLICANT / DEVELOPER	COMMON PROJECT NAME	CASE PLANNER	SUBMITTAL DATE	APPLICATION COMPLETE OR INCOMPLETE	SITE ADDRESS OR LOCATION	PERMIT(S)	CEQA STATUS	APPLICATION STATUS	PROJECT DESCRIPTION	ACRES (APPX.)
TOMS@WDCAPPLICANCES.COM										
COMMERCIAL / INDUSTRIAL / OTHER PROJECTS – APPROVED, NOT YET UNDER CONSTRUCTION										
A-B PROPERTIES C/O JOHN NEWTON 159 MOONSONG COURT MOORPARK, CA 93021 805-529-3494 newtoncnslt@msn.com	TENTATIVE TRACT NO. 5906 (A RESUBDIVISION OF TRACT 5147)	FREDDY CARRILLO fcarrillo@moorparkca.gov (805) 517-6224	08/17/2012	N/A	NORTH OF UNION PACIFIC RAILROAD TRACKS, WEST OF GABBERT ROAD	TT 5906 (PRIOR TR 5147)	MITIGATED NEGATIVE DECLARATION	FINAL MAP APPROVED	17 LOT INDUSTRIAL SUBDIVISION	36
TRILIAD DEVELOPMENT VALERIE DRAEGER 270 CONEJO RIDGE AVENUE #200 THOUSAND OAKS, CA 91361 (805) 379-9800 mail@triliad.com	MOORPARK WEST STUDIOS	SHANNA FARLEY-JUDKINS sfarley-judkins@moorparkca.gov (805) 517-6236	03/23/2009	N/A	LOS ANGELES AVENUE, WEST OF SCE SUBSTATION	IPD 2009-01 GPA 2009-01 ZC 2009-01 DA 2009-02	MITIGATED NEGATIVE DECLARATION	APPROVED 10/05/2011	MOTION PICTURE STUDIO COMPLEX	37
NEARON,NICK RINI 101 YGNACIO VALLEY ROAD, SUITE 450 WALNUT CREEK, CA 94596 (925) 743-3300 NRini@nearon.com	NEARON	FREDDY CARRILLO fcarrillo@moorparkca.gov (805) 517-6224	04/12/2017	N/A	400 SCIENCE DRIVE	TPM 2016-01 IPD 2017-01	EXEMPT FROM CEQA	APPROVED 12/6/2017	35,330 SQUARE-FOOT INDUSTRIAL BUILDING	2.2
PAUL MINOO 4M INVESTMENT CORPORTATION 6222 WILSHIRE BLVD, SUITE 270 LOS ANGELES, CA 90048 (213) 624.4040 x100 paul@4minvestment.com	5850 CONDOR DRIVE	FREDDY CARRILLO fcarrillo@moorparkca.gov (805) 517-6224	11/19/2019 10/30/2020	N/A COMPLETE	5850 CONDOR DRIVE	IPD 2019-01 CUP 2020-02 MOD 1 TO IPD 2019-01 AND CUP 2020-02	EXEMPT FROM CEQA	APPROVED 07/15/2020 MOD 1 TO IPD 2019-02 and CUP 2020-02	48,211 SQ. FT. INDUSTRIAL BUILDING UNDERGROUNDING OF UTILITY POLES AND SKYLIGHTS	3.5
MARK OSSOLA 25410 CUMBERLAND LANE CALABASAS, CA 91302 818-880-6541 mossola@aol.com	PATRIOT COMMERCE CENTER	FREDDY CARRILLO fcarrillo@moorparkca.gov (805) 517-6224	02/27/2000	N/A	WEST OF SR-23 FWY, EAST OF MILLER PARKWAY, SOUTH OF MOORPARK MARKETPLACE	IPD 2000-01	ENVIRONMENTAL IMPACT REPORT	APPROVED 03/19/2003	94,001 SQ. FT. INDUSTRIAL BUILDING BUILDING A	2.59

Appendix 3

Intersection Level of Service Calculation Worksheets

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 1
NORTH/SOUTH STREET: Grimes Canyon Rd
EAST/WEST STREET: Los Angeles Ave (SR 118)
SCENARIO: Existing Conditions
TIME PERIOD: AM Peak Hour
COUNT DATE: 5/3/19
WORK ORDER #: 2042614102

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
AM Peak	0	0	0	67	0	114	92	892	0	0	737	22
Project Trips	0	0	0	0	0	0	0	8	0	0	3	0
GEOMETRY					LR		L	T			T	R

	Level of Service Calculations					
Move-	**Lanes**		**Volume**		**V/C Ratio**	
ment	Lane	Capacity	Existing	Project	Existing	Ex+Project
NBL	0.0	0	0	0	0.00 *	0.00 *
NBT	0.0	0	0	0	0.00	0.00
NBR	0.0	0	0	0	0.00	0.00
SBL	0.0	0	67	67	0.00	0.00
SBT	1.0	1,600	0	0	0.11 *	0.11 *
SBR	0.0	0	114	114	0.00	0.00
EBL	1.0	1,600	92	92	0.06	0.06
EBT	1.0	1,600	892	900	0.56 *	0.56 *
EBR	0.0	0	0	0	0.00	0.00
WBL	0.0	0	0	0	0.00 *	0.00 *
WBT	1.0	1,600	737	740	0.46	0.46
WBR	1.0	1,600	22	22	0.01	0.01
N/S Critical Movements					0.11	0.11
E/W Critical Movements					0.56	0.56
Clearance Interval					0.00	0.00
ICU					0.67	0.67
Level of Service (LOS)					B	B

Notes: V/C - Volume to Capacity Ratio

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 1
NORTH/SOUTH STREET: Grimes Canyon Rd
EAST/WEST STREET: Los Angeles Ave (SR 118)
SCENARIO: Cumulative Conditions
TIME PERIOD: AM Peak Hour
COUNT DATE: 5/3/19
WORK ORDER #: 2042614102

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
AM Peak	0	0	0	67	0	114	92	965	0	0	868	22
Project Trips	0	0	0	0	0	0	0	8	0	0	3	0
GEOMETRY					LR		L	T			T	R

	Level of Service Calculations					
Move-	**Lanes**		**Volume**		**V/C Ratio**	
ment	Lane	Capacity	Cumulative	Project	Cumulative	Cumu+Project
NBL	0.0	0	0	0	0.00 *	0.00 *
NBT	0.0	0	0	0	0.00	0.00
NBR	0.0	0	0	0	0.00	0.00
SBL	0.0	0	67	67	0.00	0.00
SBT	1.0	1,600	0	0	0.11 *	0.11 *
SBR	0.0	0	114	114	0.00	0.00
EBL	1.0	1,600	92	92	0.06 *	0.06
EBT	1.0	1,600	965	973	0.60	0.61 *
EBR	0.0	0	0	0	0.00	0.00
WBL	0.0	0	0	0	0.00	0.00 *
WBT	1.0	1,600	868	871	0.54 *	0.54
WBR	1.0	1,600	22	22	0.01	0.01
N/S Critical Movements					0.11	0.11
E/W Critical Movements					0.60	0.61
Clearance Interval					0.00	0.00
ICU					0.71	0.72
Level of Service (LOS)					C	C

Notes: V/C - Volume to Capacity Ratio

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 1
NORTH/SOUTH STREET: Grimes Canyon Rd
EAST/WEST STREET: Los Angeles Ave (SR 118)
SCENARIO: Existing Conditions
TIME PERIOD: PM Peak Hour
COUNT DATE: 3/12/19
WORK ORDER #: 2042614102

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
PM Peak	0	0	0	23	0	81	138	944	0	0	912	29
Project Trips	0	0	0	0	0	0	0	3	0	0	8	0
GEOMETRY					LR		L	T			T	R

	Level of Service Calculations					
Move-	**Lanes**		**Volume**		**V/C Ratio**	
ment	Lane	Capacity	Existing	Project	Existing	Ex+Project
NBL	0.0	0	0	0	0.00 *	0.00 *
NBT	0.0	0	0	0	0.00	0.00
NBR	0.0	0	0	0	0.00	0.00
SBL	0.0	0	23	23	0.00	0.00
SBT	1.0	1,600	0	0	0.07 *	0.07 *
SBR	0.0	0	81	81	0.00	0.00
EBL	1.0	1,600	138	138	0.09 *	0.09 *
EBT	1.0	1,600	944	947	0.59	0.59
EBR	0.0	0	0	0	0.00	0.00
WBL	0.0	0	0	0	0.00	0.00
WBT	1.0	1,600	912	920	0.57 *	0.58 *
WBR	1.0	1,600	29	29	0.02	0.02
N/S Critical Movements					0.07	0.07
E/W Critical Movements					0.66	0.67
Clearance Interval					0.00	0.00
ICU					0.73	0.74
Level of Service (LOS)					C	C

Notes: V/C - Volume to Capacity Ratio

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 1
NORTH/SOUTH STREET: Grimes Canyon Rd
EAST/WEST STREET: Los Angeles Ave (SR 118)
SCENARIO: Cumulative Conditions
TIME PERIOD: PM Peak Hour
COUNT DATE: 3/12/19
WORK ORDER #: 2042614102

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
PM Peak	0	0	0	23	0	81	138	1118	0	0	1010	29
Project Trips	0	0	0	0	0	0	0	3	0	0	8	0
GEOMETRY					LR		L	T			T	R

	Level of Service Calculations					
Move-	**Lanes**		**Volume**		**V/C Ratio**	
ment	Lane	Capacity	umulative	Project	Cumulative	Cumu+Project
NBL	0.0	0	0	0	0.00 *	0.00 *
NBT	0.0	0	0	0	0.00	0.00
NBR	0.0	0	0	0	0.00	0.00
SBL	0.0	0	23	23	0.00	0.00
SBT	1.0	1,600	0	0	0.07 *	0.07 *
SBR	0.0	0	81	81	0.00	0.00
EBL	1.0	1,600	138	138	0.09 *	0.09 *
EBT	1.0	1,600	1,118	1,121	0.70	0.70
EBR	0.0	0	0	0	0.00	0.00
WBL	0.0	0	0	0	0.00	0.00
WBT	1.0	1,600	1,010	1,018	0.63 *	0.64 *
WBR	1.0	1,600	29	29	0.02	0.02
N/S Critical Movements					0.07	0.07
E/W Critical Movements					0.72	0.73
Clearance Interval					0.00	0.00
ICU					0.79	0.80
Level of Service (LOS)					C	C

Notes: V/C - Volume to Capacity Ratio

HCS7 Two-Way Stop-Control Report

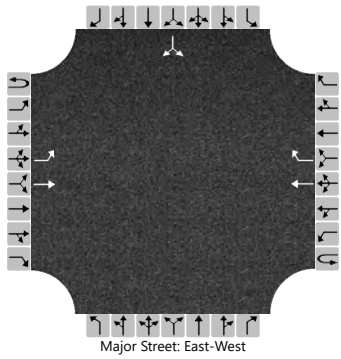
General Information

Analyst	DJL
Agency/Co.	Stantec
Date Performed	11/2/2021
Analysis Year	2021
Time Analyzed	AM Peak Hour
Intersection Orientation	East-West
Project Description	Pentair Warehouse Expansion

Site Information

Intersection	Los Angeles Av/Montair Dr
Jurisdiction	City of Moorpark
East/West Street	Los Angeles Ave
North/South Street	Montair Dr
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	1		0	0	0		0	1	0
Configuration		L	T				T	R							LR	
Volume (veh/h)		13	780				712	50						5		3
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized							No									
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		14													9	
Capacity, c (veh/h)		799													146	
v/c Ratio		0.02													0.06	
95% Queue Length, Q_{95} (veh)		0.1													0.2	
Control Delay (s/veh)		9.6													31.1	
Level of Service (LOS)		A													D	
Approach Delay (s/veh)		0.2												31.1		
Approach LOS														D		

Copyright © 2021 University of Florida. All Rights Reserved.

HCS7 Two-Way Stop-Control Report

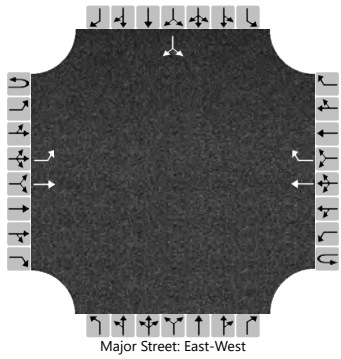
General Information

Analyst	DJL
Agency/Co.	Stantec
Date Performed	11/2/2021
Analysis Year	EXPR
Time Analyzed	AM Peak Hour
Intersection Orientation	East-West
Project Description	Pentair Warehouse Expansion

Site Information

Intersection	Los Angeles Av/Montair Dr
Jurisdiction	City of Moorpark
East/West Street	Los Angeles Ave
North/South Street	Montair Dr
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	1		0	0	0		0	1	0
Configuration		L	T				T	R							LR	
Volume (veh/h)		21	780				712	73						12		6
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized							No									
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		23													20	
Capacity, c (veh/h)		782													136	
v/c Ratio		0.03													0.14	
95% Queue Length, Q_{95} (veh)		0.1													0.5	
Control Delay (s/veh)		9.7													35.9	
Level of Service (LOS)		A													E	
Approach Delay (s/veh)		0.3												35.9		
Approach LOS														E		

Copyright © 2021 University of Florida. All Rights Reserved.

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 2 **MITIGATED**
NORTH/SOUTH STREET: Montair Dr
EAST/WEST STREET: Los Angeles Ave (SR 118)
SCENARIO: Existing Conditions
TIME PERIOD: AM Peak Hour
COUNT DATE: 10/1/21
WORK ORDER #: 2042614102

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
AM Peak	0	0	0	5	0	3	13	780	0	0	712	50
Project Trips	0	0	0	7	0	3	8	0	0	0	0	23
GEOMETRY					LR		L	T			T	R

	Level of Service Calculations					
Move-	**Lanes**		**Volume**		**V/C Ratio**	
ment	Lane	Capacity	Existing	Project	Existing	Ex+Project
NBL	0.0	0	0	0	0.00 *	0.00 *
NBT	0.0	0	0	0	0.00	0.00
NBR	0.0	0	0	0	0.00	0.00
SBL	0.0	0	5	12	0.00	0.00
SBT	1.0	1,600	0	0	0.01 *	0.01 *
SBR	0.0	0	3	6	0.00	0.00
EBL	1.0	1,600	13	21	0.01	0.01
EBT	1.0	1,600	780	780	0.49 *	0.49 *
EBR	0.0	0	0	0	0.00	0.00
WBL	0.0	0	0	0	0.00 *	0.00 *
WBT	1.0	1,600	712	712	0.45	0.45
WBR	1.0	1,600	50	73	0.03	0.05
N/S Critical Movements					0.01	0.01
E/W Critical Movements					0.49	0.49
Clearance Interval					0.10	0.10
ICU					0.60	0.60
Level of Service (LOS)					A	A

Notes: V/C - Volume to Capacity Ratio

HCS7 Two-Way Stop-Control Report

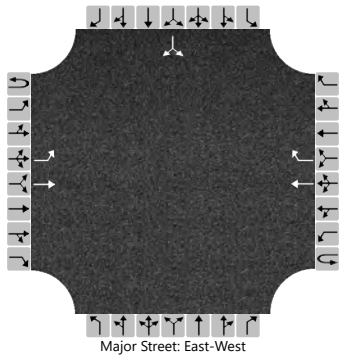
General Information

Analyst	DJL
Agency/Co.	Stantec
Date Performed	11/2/2021
Analysis Year	CUMU
Time Analyzed	AM Peak Hour
Intersection Orientation	East-West
Project Description	Pentair Warehouse Expansion

Site Information

Intersection	Los Angeles Av/Montair Dr
Jurisdiction	City of Moorpark
East/West Street	Los Angeles Ave
North/South Street	Montair Dr
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	1		0	0	0		0	1	0
Configuration		L	T				T	R							LR	
Volume (veh/h)		13	853				843	50						5		3
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized							No									
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		14													9	
Capacity, c (veh/h)		706													108	
v/c Ratio		0.02													0.08	
95% Queue Length, Q_{95} (veh)		0.1													0.3	
Control Delay (s/veh)		10.2													41.2	
Level of Service (LOS)		B													E	
Approach Delay (s/veh)		0.2												41.2		
Approach LOS														E		

Copyright © 2021 University of Florida. All Rights Reserved.

HCS7 Two-Way Stop-Control Report

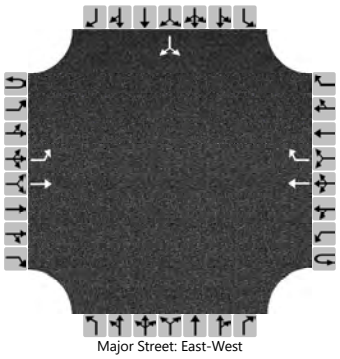
General Information

Analyst	DJL
Agency/Co.	Stantec
Date Performed	11/2/2021
Analysis Year	CUPR
Time Analyzed	AM Peak Hour
Intersection Orientation	East-West
Project Description	Pentair Warehouse Expansion

Site Information

Intersection	Los Angeles Av/Montair Dr
Jurisdiction	City of Moorpark
East/West Street	Los Angeles Ave
North/South Street	Montair Dr
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	1		0	0	0		0	1	0
Configuration		L	T				T	R							LR	
Volume (veh/h)		21	853				843	73						12		6
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized							No									
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		23													20	
Capacity, c (veh/h)		691													100	
v/c Ratio		0.03													0.20	
95% Queue Length, Q_{95} (veh)		0.1													0.7	
Control Delay (s/veh)		10.4													49.5	
Level of Service (LOS)		B													E	
Approach Delay (s/veh)		0.2												49.5		
Approach LOS														E		

Copyright © 2022 University of Florida. All Rights Reserved.

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 2 **MITIGATED**
NORTH/SOUTH STREET: Montair Dr
EAST/WEST STREET: Los Angeles Ave (SR 118)
SCENARIO: Cumulative Conditions
TIME PERIOD: AM Peak Hour
COUNT DATE: 10/1/21
WORK ORDER #: 2042614102

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
AM Peak	0	0	0	5	0	3	13	853	0	0	843	50
Project Trips	0	0	0	7	0	3	8	0	0	0	0	23
GEOMETRY					LR		L	T			T	R

	Level of Service Calculations					
Move-	**Lanes**		**Volume**		**V/C Ratio**	
ment	Lane	Capacity	Existing	Project	Existing	Ex+Project
NBL	0.0	0	0	0	0.00 *	0.00 *
NBT	0.0	0	0	0	0.00	0.00
NBR	0.0	0	0	0	0.00	0.00
SBL	0.0	0	5	12	0.00	0.00
SBT	1.0	1,600	0	0	0.01 *	0.01 *
SBR	0.0	0	3	6	0.00	0.00
EBL	1.0	1,600	13	21	0.01 *	0.01 *
EBT	1.0	1,600	853	853	0.53	0.53
EBR	0.0	0	0	0	0.00	0.00
WBL	0.0	0	0	0	0.00	0.00
WBT	1.0	1,600	843	843	0.53 *	0.53 *
WBR	1.0	1,600	50	73	0.03	0.05
N/S Critical Movements					0.01	0.01
E/W Critical Movements					0.54	0.54
Clearance Interval					0.10	0.10
ICU					0.65	0.65
Level of Service (LOS)					B	B

Notes: V/C - Volume to Capacity Ratio

HCS7 Two-Way Stop-Control Report

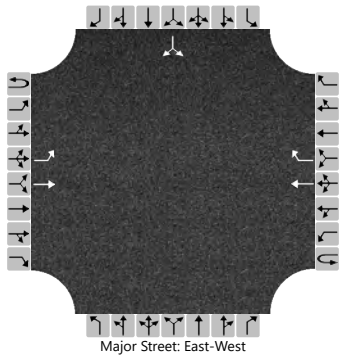
General Information

Analyst	DJL
Agency/Co.	Stantec
Date Performed	11/2/2021
Analysis Year	2021
Time Analyzed	PM Peak Hour
Intersection Orientation	East-West
Project Description	Pentair Warehouse Expansion

Site Information

Intersection	Los Angeles Av/Montair Dr
Jurisdiction	City of Moorpark
East/West Street	Los Angeles Ave
North/South Street	Montair Dr
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	1		0	0	0		0	1	0
Configuration		L	T				T	R							LR	
Volume (veh/h)		6	936				836	10						41		23
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized							No									
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		7													70	
Capacity, c (veh/h)		738													99	
v/c Ratio		0.01													0.70	
95% Queue Length, Q_{95} (veh)		0.0													3.6	
Control Delay (s/veh)		9.9													101.5	
Level of Service (LOS)		A													F	
Approach Delay (s/veh)		0.1												101.5		
Approach LOS														F		

Copyright © 2021 University of Florida. All Rights Reserved.

HCS7 Two-Way Stop-Control Report

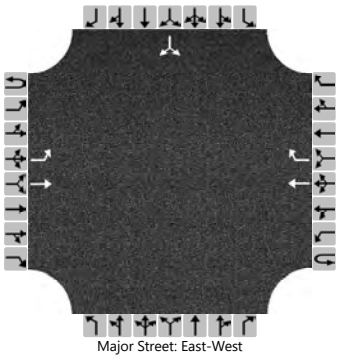
General Information

Analyst	DJL
Agency/Co.	Stantec
Date Performed	11/2/2021
Analysis Year	EXPR
Time Analyzed	PM Peak Hour
Intersection Orientation	East-West
Project Description	Pentair Warehouse Expansion

Site Information

Intersection	Los Angeles Av/Montair Dr
Jurisdiction	City of Moorpark
East/West Street	Los Angeles Ave
North/South Street	Montair Dr
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	1		0	0	0		0	1	0
Configuration		L	T				T	R							LR	
Volume (veh/h)		9	936				836	20						66		31
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized							No									
Median Type | Storage							Undivided									

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		10													105	
Capacity, c (veh/h)		731													93	
v/c Ratio		0.01													1.13	
95% Queue Length, Q_{95} (veh)		0.0													7.1	
Control Delay (s/veh)		10.0													215.6	
Level of Service (LOS)		A													F	
Approach Delay (s/veh)		0.1												215.6		
Approach LOS														F		

Copyright © 2022 University of Florida. All Rights Reserved.

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 2 **MITIGATED**
NORTH/SOUTH STREET: Montair Dr
EAST/WEST STREET: Los Angeles Ave (SR 118)
SCENARIO: Existing Conditions
TIME PERIOD: PM Peak Hour
COUNT DATE: 10/1/21
WORK ORDER #: 2042614102

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
AM Peak	0	0	0	41	0	23	6	936	0	0	836	10
Project Trips	0	0	0	25	0	8	3	0	0	0	0	10
GEOMETRY					LR		L	T			T	R

	Level of Service Calculations					
Move-	**Lanes**		**Volume**		**V/C Ratio**	
ment	Lane	Capacity	Existing	Project	Existing	Ex+Project
NBL	0.0	0	0	0	0.00 *	0.00 *
NBT	0.0	0	0	0	0.00	0.00
NBR	0.0	0	0	0	0.00	0.00
SBL	0.0	0	41	66	0.00	0.00
SBT	1.0	1,600	0	0	0.04 *	0.06 *
SBR	0.0	0	23	31	0.00	0.00
EBL	1.0	1,600	6	9	0.00	0.01
EBT	1.0	1,600	936	936	0.59 *	0.59 *
EBR	0.0	0	0	0	0.00	0.00
WBL	0.0	0	0	0	0.00 *	0.00 *
WBT	1.0	1,600	836	836	0.52	0.52
WBR	1.0	1,600	10	20	0.01	0.01
N/S Critical Movements					0.04	0.06
E/W Critical Movements					0.59	0.59
Clearance Interval					0.10	0.10
ICU					0.73	0.75
Level of Service (LOS)					C	C

Notes: V/C - Volume to Capacity Ratio

HCS7 Two-Way Stop-Control Report

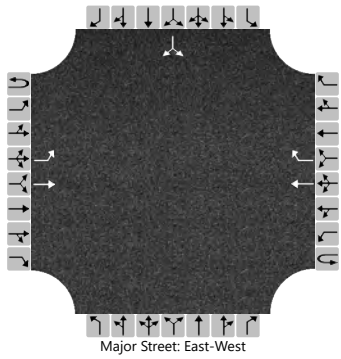
General Information

Analyst	DJL
Agency/Co.	Stantec
Date Performed	11/2/2021
Analysis Year	CUMU
Time Analyzed	PM Peak Hour
Intersection Orientation	East-West
Project Description	Pentair Warehouse Expansion

Site Information

Intersection	Los Angeles Av/Montair Dr
Jurisdiction	City of Moorpark
East/West Street	Los Angeles Ave
North/South Street	Montair Dr
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	1		0	0	0		0	1	0
Configuration		L	T				T	R							LR	
Volume (veh/h)		6	1110				934	10						41		23
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized							No									
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		7													70	
Capacity, c (veh/h)		673													66	
v/c Ratio		0.01													1.05	
95% Queue Length, Q_{95} (veh)		0.0													5.3	
Control Delay (s/veh)		10.4													233.4	
Level of Service (LOS)		B													F	
Approach Delay (s/veh)		0.1												233.4		
Approach LOS														F		

Copyright © 2021 University of Florida. All Rights Reserved.

HCS7 Two-Way Stop-Control Report

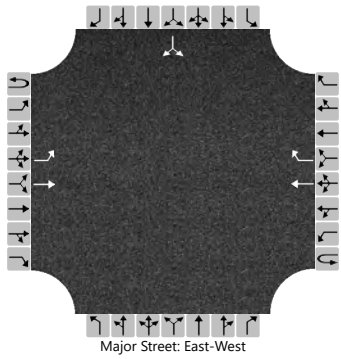
General Information

Analyst	DJL
Agency/Co.	Stantec
Date Performed	11/2/2021
Analysis Year	CUPR
Time Analyzed	PM Peak Hour
Intersection Orientation	East-West
Project Description	Pentair Warehouse Expansion

Site Information

Intersection	Los Angeles Av/Montair Dr
Jurisdiction	City of Moorpark
East/West Street	Los Angeles Ave
North/South Street	Montair Dr
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	1		0	0	0		0	1	0
Configuration		L	T				T	R							LR	
Volume (veh/h)		9	1110				934	20						66		31
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized							No									
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		10													105	
Capacity, c (veh/h)		667													62	
v/c Ratio		0.01													1.70	
95% Queue Length, Q_{95} (veh)		0.0													9.6	
Control Delay (s/veh)		10.5													482.8	
Level of Service (LOS)		B													F	
Approach Delay (s/veh)		0.1												482.8		
Approach LOS														F		

Copyright © 2021 University of Florida. All Rights Reserved.

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 2 **MITIGATED**
NORTH/SOUTH STREET: Montair Dr
EAST/WEST STREET: Los Angeles Ave (SR 118)
SCENARIO: Cumulative Conditions
TIME PERIOD: PM Peak Hour
COUNT DATE: 10/1/21
WORK ORDER #: 2042614102

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
AM Peak	0	0	0	41	0	23	6	1110	0	0	934	10
Project Trips	0	0	0	25	0	8	3	0	0	0	0	10
GEOMETRY					LR		L	T			T	R

	Level of Service Calculations					
Move-	**Lanes**		**Volume**		**V/C Ratio**	
ment	Lane	Capacity	Existing	Project	Existing	Ex+Project
NBL	0.0	0	0	0	0.00 *	0.00 *
NBT	0.0	0	0	0	0.00	0.00
NBR	0.0	0	0	0	0.00	0.00
SBL	0.0	0	41	66	0.00	0.00
SBT	1.0	1,600	0	0	0.04 *	0.06 *
SBR	0.0	0	23	31	0.00	0.00
EBL	1.0	1,600	6	9	0.00	0.01
EBT	1.0	1,600	1,110	1,110	0.69 *	0.69 *
EBR	0.0	0	0	0	0.00	0.00
WBL	0.0	0	0	0	0.00 *	0.00 *
WBT	1.0	1,600	934	934	0.58	0.58
WBR	1.0	1,600	10	20	0.01	0.01
N/S Critical Movements					0.04	0.06
E/W Critical Movements					0.69	0.69
Clearance Interval					0.10	0.10
ICU					0.83	0.85
Level of Service (LOS)					D	D

Notes: V/C - Volume to Capacity Ratio

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 3
NORTH/SOUTH STREET: Tierra Rejada Rd/Gabbert Rd
EAST/WEST STREET: Los Angeles Ave
SCENARIO: Existing Conditions
TIME PERIOD: AM Peak Hour
COUNT DATE: 5/13/19
WORK ORDER #: 2042589300

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
AM Peak	230	208	561	45	225	91	101	728	240	356	574	47
Project Trips	9	0	0	0	0	0	0	4	3	0	14	0
GEOMETRY	L	T	R	L	T	R	L	TT	R	LL	TT	R

	Level of Service Calculations					
Move-	**Lanes**		**Volume**		**V/C Ratio**	
ment	Lane	Capacity	Existing	Project	Existing	Ex+Project
NBL	1.0	1,600	230	239	0.14	0.15
NBT	1.0	1,600	208	208	0.13	0.13
NBR	1.0 (a)	1,600	432	432	0.27 *	0.27 *
SBL	1.0	1,600	45	45	0.03 *	0.03 *
SBT	1.0	1,600	225	225	0.14	0.14
SBR	1.0	1,600	91	91	0.06	0.06
EBL	1.0	1,600	101	101	0.06	0.06
EBT	2.0	3,200	728	732	0.23 *	0.23 *
EBR	1.0	1,600	240	243	0.15	0.15
WBL	2.0	2,880	356	356	0.12 *	0.12 *
WBT	2.0	3,200	574	588	0.18	0.18
WBR	1.0	1,600	47	47	0.03	0.03
N/S Critical Movements					0.30	0.30
E/W Critical Movements					0.35	0.35
Clearance Interval					0.10	0.10
ICU					0.75	0.75
Level of Service (LOS)					C	C

Notes: V/C - Volume to Capacity Ratio
(a) 23% RT overlap w/WB LT

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 3
NORTH/SOUTH STREET: Tierra Rejada Rd/Gabbert Rd
EAST/WEST STREET: Los Angeles Ave
SCENARIO: Cumulative Conditions
TIME PERIOD: AM Peak Hour
COUNT DATE: 5/13/19
WORK ORDER #: 2042589300

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
AM Peak	261	236	561	88	282	172	133	774	244	356	730	65
Project Trips	9	0	0	0	0	0	0	4	3	0	14	0
GEOMETRY	L	T	R	L	T	R	L	TT	R	LL	TT	R

	Level of Service Calculations						
Move-	**Lanes**			**Volume**		**V/C Ratio**	
ment	Lane		Capacity	umulative	Project	Cumulative	Cumu+Project
NBL	1.0		1,600	261	270	0.16	0.17
NBT	1.0		1,600	236	236	0.15	0.15
NBR	1.0	(a)	1,600	432	432	0.27 *	0.27 *
SBL	1.0		1,600	88	88	0.06 *	0.06 *
SBT	1.0		1,600	282	282	0.18	0.18
SBR	1.0		1,600	172	172	0.11	0.11
EBL	1.0		1,600	133	133	0.08	0.08
EBT	2.0		3,200	774	778	0.24 *	0.24 *
EBR	1.0		1,600	244	247	0.15	0.15
WBL	2.0		2,880	356	356	0.12 *	0.12 *
WBT	2.0		3,200	730	744	0.23	0.23
WBR	1.0		1,600	65	65	0.04	0.04
N/S Critical Movements						0.33	0.33
E/W Critical Movements						0.36	0.36
Clearance Interval						0.10	0.10
ICU						0.79	0.79
Level of Service (LOS)						C	C

Notes: V/C - Volume to Capacity Ratio
(a) 23% RT overlap w/WB LT

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 3
NORTH/SOUTH STREET: Tierra Rejada Rd/Gabbert Rd
EAST/WEST STREET: Los Angeles Ave
SCENARIO: Existing Conditions
TIME PERIOD: PM Peak Hour
COUNT DATE: 5/13/19
WORK ORDER #: 2042589300

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
PM Peak	129	92	346	44	168	117	89	720	248	321	743	30
Project Trips	4	0	0	0	0	0	0	15	10	0	6	0
GEOMETRY	L	T	R	L	T	R	L	TT	R	LL	TT	R

	Level of Service Calculations						
Move-	**Lanes**			**Volume**		**V/C Ratio**	
ment	Lane		Capacity	Existing	Project	Existing	Ex+Project
NBL	1.0		1,600	129	133	0.08	0.08
NBT	1.0		1,600	92	92	0.06	0.06
NBR	1.0	(a)	1,600	187	187	0.12 *	0.12 *
SBL	1.0		1,600	44	44	0.03 *	0.03 *
SBT	1.0		1,600	168	168	0.11	0.11
SBR	1.0		1,600	117	117	0.07	0.07
EBL	1.0		1,600	89	89	0.06	0.06
EBT	2.0		3,200	720	735	0.23 *	0.23 *
EBR	1.0		1,600	248	258	0.16	0.16
WBL	2.0		2,880	321	321	0.11 *	0.11 *
WBT	2.0		3,200	743	749	0.23	0.23
WBR	1.0		1,600	30	30	0.02	0.02
N/S Critical Movements						0.15	0.15
E/W Critical Movements						0.34	0.34
Clearance Interval						0.10	0.10
ICU						0.59	0.59
Level of Service (LOS)						A	A

Notes: V/C - Volume to Capacity Ratio
(a) 46% RT overlap w/WB LT

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 3
NORTH/SOUTH STREET: Tierra Rejada Rd/Gabbert Rd
EAST/WEST STREET: Los Angeles Ave
SCENARIO: Cumulative Conditions
TIME PERIOD: PM Peak Hour
COUNT DATE: 5/13/19
WORK ORDER #: 2042589300

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
PM Peak	135	177	346	69	198	159	192	886	276	321	804	88
Project Trips	4	0	0	0	0	0	0	15	10	0	6	0
GEOMETRY	L	T	R	L	T	R	L	TT	R	LL	TT	R

	Level of Service Calculations						
Move-	**Lanes**			**Volume**		**V/C Ratio**	
ment	Lane		Capacity	umulative	Project	Cumulative	Cumu+Project
NBL	1.0		1,600	135	139	0.08	0.09
NBT	1.0		1,600	177	177	0.11	0.11
NBR	1.0	(a)	1,600	187	187	0.12 *	0.12 *
SBL	1.0		1,600	69	69	0.04 *	0.04 *
SBT	1.0		1,600	198	198	0.12	0.12
SBR	1.0		1,600	159	159	0.10	0.10
EBL	1.0		1,600	192	192	0.12	0.12
EBT	2.0		3,200	886	901	0.28 *	0.28 *
EBR	1.0		1,600	276	286	0.17	0.18
WBL	2.0		2,880	321	321	0.11 *	0.11 *
WBT	2.0		3,200	804	810	0.25	0.25
WBR	1.0		1,600	88	88	0.06	0.06
N/S Critical Movements						0.16	0.16
E/W Critical Movements						0.39	0.39
Clearance Interval						0.10	0.10
ICU						0.65	0.65
Level of Service (LOS)						B	B

Notes: V/C - Volume to Capacity Ratio
(a) 46% RT overlap w/WB LT

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 4
NORTH/SOUTH STREET: Moorpark rd
EAST/WEST STREET: Los Angeles Ave
SCENARIO: Existing Conditions
TIME PERIOD: AM Peak Hour
COUNT DATE: 5/13/19
WORK ORDER #: 2042589300

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
AM Peak	64	86	103	164	44	105	141	968	41	99	830	121
Project Trips	0	0	0	0	0	0	0	4	0	0	14	0
GEOMETRY	L	LT	R	L	LTR	R	L	TT TR		L	TT	R

	Level of Service Calculations					
Move-	**Lanes**		**Volume**		**V/C Ratio**	
ment	Lane	Capacity	Existing	Project	Existing	Ex+Project
NBL	0.0	0	64	64	0.00	0.00
NBT	2.0	3,200	86	86	0.05	0.05
NBR	1.0	1,600	103	103	0.06 *	0.06 *
SBL	0.0	0	164	164	0.00	0.00
SBT	3.0	4,800	44	44	0.07 *	0.07 *
SBR	0.0	0	105	105	0.00	0.00
EBL	1.0	1,600	141	141	0.09 *	0.09 *
EBT	3.0	4,800	968	972	0.21	0.21
EBR	0.0	0	41	41	0.00	0.00
WBL	1.0	1,600	99	99	0.06	0.06
WBT	2.0	3,200	830	844	0.26 *	0.26 *
WBR	1.0	1,600	121	121	0.08	0.08
N/S Critical Movements					0.13	0.13
E/W Critical Movements					0.35	0.35
Clearance Interval					0.10	0.10
ICU					0.58	0.58
Level of Service (LOS)					A	A

Notes: V/C - Volume to Capacity Ratio

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 4
NORTH/SOUTH STREET: Moorpark rd
EAST/WEST STREET: Los Angeles Ave
SCENARIO: Cumulative Conditions
TIME PERIOD: AM Peak Hour
COUNT DATE: 5/13/19
WORK ORDER #: 2042589300

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
AM Peak	64	90	103	420	49	129	158	1042	41	99	950	230
Project Trips	0	0	0	0	0	0	0	4	0	0	14	0
GEOMETRY	L	LT	R	L	LTR	R	L	TT TR		L	TT	R

	Level of Service Calculations					
Move-	**Lanes**		**Volume**		**V/C Ratio**	
ment	Lane	Capacity	umulative	Project	Cumulative	Cumu+Project
NBL	0.0	0	64	64	0.00	0.00
NBT	2.0	3,200	90	90	0.05	0.05
NBR	1.0	1,600	103	103	0.06 *	0.06 *
SBL	0.0	0	420	420	0.00	0.00
SBT	3.0	4,800	49	49	0.12 *	0.12 *
SBR	0.0	0	129	129	0.00	0.00
EBL	1.0	1,600	158	158	0.10 *	0.10 *
EBT	3.0	4,800	1,042	1,046	0.23	0.23
EBR	0.0	0	41	41	0.00	0.00
WBL	1.0	1,600	99	99	0.06	0.06
WBT	2.0	3,200	950	964	0.30 *	0.30 *
WBR	1.0	1,600	230	230	0.14	0.14
N/S Critical Movements					0.18	0.18
E/W Critical Movements					0.40	0.40
Clearance Interval					0.10	0.10
ICU					0.68	0.68
Level of Service (LOS)					B	B

Notes: V/C - Volume to Capacity Ratio

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 4
NORTH/SOUTH STREET: Moorpark rd
EAST/WEST STREET: Los Angeles Ave
SCENARIO: Existing Conditions
TIME PERIOD: PM Peak Hour
COUNT DATE: 5/13/19
WORK ORDER #: 2042589300

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
PM Peak	46	83	132	195	112	94	148	934	55	269	949	109
Project Trips	0	0	0	0	0	0	0	15	0	0	6	0
GEOMETRY	L	LT	R	L	LTR	R	L	TT TR		L	TT	R

	Level of Service Calculations					
Move-	**Lanes**		**Volume**		**V/C Ratio**	
ment	Lane	Capacity	Existing	Project	Existing	Ex+Project
NBL	0.0	0	46	46	0.00	0.00
NBT	2.0	3,200	83	83	0.04	0.04
NBR	1.0	1,600	132	132	0.08 *	0.08 *
SBL	0.0	0	195	195	0.00	0.00
SBT	3.0	4,800	112	112	0.08 *	0.08 *
SBR	0.0	0	94	94	0.00	0.00
EBL	1.0	1,600	148	148	0.09 *	0.09 *
EBT	3.0	4,800	934	949	0.21	0.21
EBR	0.0	0	55	55	0.00	0.00
WBL	1.0	1,600	269	269	0.17	0.17
WBT	2.0	3,200	949	955	0.30 *	0.30 *
WBR	1.0	1,600	109	109	0.07	0.07
N/S Critical Movements					0.16	0.16
E/W Critical Movements					0.39	0.39
Clearance Interval					0.10	0.10
ICU					0.65	0.65
Level of Service (LOS)					B	B

Notes: V/C - Volume to Capacity Ratio

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 4
NORTH/SOUTH STREET: Moorpark rd
EAST/WEST STREET: Los Angeles Ave
SCENARIO: Cumulative Conditions
TIME PERIOD: PM Peak Hour
COUNT DATE: 5/13/19
WORK ORDER #: 2042589300

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
PM Peak	46	89	132	348	128	116	180	1053	55	269	1028	447
Project Trips	0	0	0	0	0	0	0	15	0	0	6	0
GEOMETRY	L	LT	R	L	LTR	R	L	TT TR		L	TT	R

	Level of Service Calculations					
Move-	**Lanes**		**Volume**		**V/C Ratio**	
ment	Lane	Capacity	umulative	Project	Cumulative	Cumu+Project
NBL	0.0	0	46	46	0.00	0.00
NBT	2.0	3,200	89	89	0.04	0.04
NBR	1.0	1,600	132	132	0.08 *	0.08 *
SBL	0.0	0	348	348	0.00	0.00
SBT	3.0	4,800	128	128	0.12 *	0.12 *
SBR	0.0	0	116	116	0.00	0.00
EBL	1.0	1,600	180	180	0.11 *	0.11 *
EBT	3.0	4,800	1,053	1,068	0.23	0.23
EBR	0.0	0	55	55	0.00	0.00
WBL	1.0	1,600	269	269	0.17	0.17
WBT	2.0	3,200	1,028	1,034	0.32 *	0.32 *
WBR	1.0	1,600	447	447	0.28	0.28
N/S Critical Movements					0.20	0.20
E/W Critical Movements					0.43	0.43
Clearance Interval					0.10	0.10
ICU					0.73	0.73
Level of Service (LOS)					C	C

Notes: V/C - Volume to Capacity Ratio

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 5
NORTH/SOUTH STREET: Spring Rd
EAST/WEST STREET: Los Angeles Ave
SCENARIO: Existing Conditions
TIME PERIOD: AM Peak Hour
COUNT DATE: 5/13/19
WORK ORDER #: 2042589300

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
AM Peak	209	286	51	564	205	101	161	855	160	32	719	228
Project Trips	0	0	0	0	0	0	0	4	0	0	14	0
GEOMETRY	LL	T TR		LL	T	R	LL	TT	R	L	TT	R

	Level of Service Calculations					
Move-	**Lanes**		**Volume**		**V/C Ratio**	
ment	Lane	Capacity	Existing	Project	Existing	Ex+Project
NBL	2.0	2,880	209	209	0.07	0.07
NBT	2.0	3,200	286	286	0.11 *	0.11 *
NBR	0.0	0	51	51	0.00	0.00
SBL	2.0	2,880	564	564	0.20 *	0.20 *
SBT	1.0	1,600	205	205	0.13	0.13
SBR	1.0	1,600	101	101	0.06	0.06
EBL	2.0	2,880	161	161	0.06	0.06 *
EBT	2.0	3,200	855	859	0.27 *	0.27
EBR	1.0	1,600	160	160	0.10	0.10
WBL	1.0	1,600	32	32	0.02 *	0.02
WBT	2.0	3,200	719	733	0.22	0.23 *
WBR	1.0	1,600	228	228	0.14	0.14
N/S Critical Movements					0.31	0.31
E/W Critical Movements					0.29	0.29
Clearance Interval					0.10	0.10
ICU					0.70	0.70
Level of Service (LOS)					B	B

Notes: V/C - Volume to Capacity Ratio

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 5
NORTH/SOUTH STREET: Spring Rd
EAST/WEST STREET: Los Angeles Ave
SCENARIO: Cumulative Conditions
TIME PERIOD: AM Peak Hour
COUNT DATE: 5/13/19
WORK ORDER #: 2042589300

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
AM Peak	209	290	51	580	212	101	167	1225	163	32	995	244
Project Trips	0	0	0	0	0	0	0	4	0	0	14	0
GEOMETRY	LL	T TR		LL	T	R	LL	TT	R	L	TT	R

	Level of Service Calculations					
Move-	**Lanes**		**Volume**		**V/C Ratio**	
ment	Lane	Capacity	umulative	Project	Cumulative	Cumu+Project
NBL	2.0	2,880	209	209	0.07	0.07
NBT	2.0	3,200	290	290	0.11 *	0.11 *
NBR	0.0	0	51	51	0.00	0.00
SBL	2.0	2,880	580	580	0.20 *	0.20 *
SBT	1.0	1,600	212	212	0.13	0.13
SBR	1.0	1,600	101	101	0.06	0.06
EBL	2.0	2,880	167	167	0.06	0.06
EBT	2.0	3,200	1,225	1,229	0.38 *	0.38 *
EBR	1.0	1,600	163	163	0.10	0.10
WBL	1.0	1,600	32	32	0.02 *	0.02 *
WBT	2.0	3,200	995	1,009	0.31	0.32
WBR	1.0	1,600	244	244	0.15	0.15
N/S Critical Movements					0.31	0.31
E/W Critical Movements					0.40	0.40
Clearance Interval					0.10	0.10
ICU					0.81	0.81
Level of Service (LOS)					D	D

Notes: V/C - Volume to Capacity Ratio

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 5
NORTH/SOUTH STREET: Spring Rd
EAST/WEST STREET: Los Angeles Ave
SCENARIO: Existing Conditions
TIME PERIOD: PM Peak Hour
COUNT DATE: 5/13/19
WORK ORDER #: 2042589300

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
PM Peak	212	288	48	363	202	91	152	907	167	50	1051	655
Project Trips	0	0	0	0	0	0	0	15	0	0	6	0
GEOMETRY	LL	T TR		LL	T	R	LL	TT	R	L	TT	R

	Level of Service Calculations					
Move-	**Lanes**		**Volume**		**V/C Ratio**	
ment	Lane	Capacity	Existing	Project	Existing	Ex+Project
NBL	2.0	2,880	212	212	0.07	0.07
NBT	2.0	3,200	288	288	0.11 *	0.11 *
NBR	0.0	0	48	48	0.00	0.00
SBL	2.0	2,880	363	363	0.13 *	0.13 *
SBT	1.0	1,600	202	202	0.13	0.13
SBR	1.0	1,600	91	91	0.06	0.06
EBL	2.0	2,880	152	152	0.05 *	0.05 *
EBT	2.0	3,200	907	922	0.28	0.29
EBR	1.0	1,600	167	167	0.10	0.10
WBL	1.0	1,600	50	50	0.03	0.03
WBT	2.0	3,200	1,051	1,057	0.33 *	0.33 *
WBR	1.0 (a)	1,600	472	472	0.29	0.29
N/S Critical Movements					0.24	0.24
E/W Critical Movements					0.38	0.38
Clearance Interval					0.10	0.10
ICU					0.72	0.72
Level of Service (LOS)					C	C

Notes: V/C - Volume to Capacity Ratio
(a) 28% RT overlap w/SB LT

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 5
NORTH/SOUTH STREET: Spring Rd
EAST/WEST STREET: Los Angeles Ave
SCENARIO: Cumulative Conditions
TIME PERIOD: PM Peak Hour
COUNT DATE: 5/13/19
WORK ORDER #: 2042589300

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
PM Peak	212	299	48	379	210	91	161	1228	170	50	1566	684
Project Trips	0	0	0	0	0	0	0	15	0	0	6	0
GEOMETRY	LL	T TR		LL	T	R	LL	TT	R	L	TT	R

	Level of Service Calculations					
Move-	**Lanes**		**Volume**		**V/C Ratio**	
ment	Lane	Capacity	umulative	Project	Cumulative	Cumu+Project
NBL	2.0	2,880	212	212	0.07	0.07
NBT	2.0	3,200	299	299	0.11 *	0.11 *
NBR	0.0	0	48	48	0.00	0.00
SBL	2.0	2,880	379	379	0.13 *	0.13 *
SBT	1.0	1,600	210	210	0.13	0.13
SBR	1.0	1,600	91	91	0.06	0.06
EBL	2.0	2,880	161	161	0.06 *	0.06 *
EBT	2.0	3,200	1,228	1,243	0.38	0.39
EBR	1.0	1,600	170	170	0.11	0.11
WBL	1.0	1,600	50	50	0.03	0.03
WBT	2.0	3,200	1,566	1,572	0.49 *	0.49 *
WBR	1.0 (a)	1,600	492	492	0.31	0.31
N/S Critical Movements					0.24	0.24
E/W Critical Movements					0.55	0.55
Clearance Interval					0.10	0.10
ICU					0.89	0.89
Level of Service (LOS)					D	D

Notes: V/C - Volume to Capacity Ratio
(a) 28% RT overlap w/SB LT

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 6
NORTH/SOUTH STREET: Miller Pkwy
EAST/WEST STREET: Los Angeles Ave
SCENARIO: Existing Conditions
TIME PERIOD: AM Peak Hour
COUNT DATE: 5/13/19
WORK ORDER #: 2042589300

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
AM Peak	59	10	58	10	1	15	55	1342	107	68	1021	114
Project Trips	0	0	0	0	0	0	0	4	0	0	14	0
GEOMETRY	LL	T	R	LTR			L	TT	R	LL	TTT	R

	Level of Service Calculations					
Move-	**Lanes**		**Volume**		**V/C Ratio**	
ment	Lane	Capacity	Existing	Project	Existing	Ex+Project
NBL	2.0	2,880	59	59	0.02 *	0.02 *
NBT	1.0	1,600	10	10	0.01	0.01
NBR	1.0	1,600	58	58	0.04	0.04
SBL	0.0	0	10	10	0.00	0.00
SBT	1.0	1,600	1	1	0.02 *	0.02 *
SBR	0.0	0	15	15	0.01	0.01
EBL	1.0	1,600	55	55	0.03	0.03
EBT	2.0	3,200	1,342	1,346	0.42 *	0.42 *
EBR	1.0	1,600	107	107	0.07	0.07
WBL	2.0	2,880	68	68	0.02 *	0.02 *
WBT	3.0	4,800	1,021	1,035	0.21	0.22
WBR	1.0	1,600	114	114	0.07	0.07
N/S Critical Movements					0.04	0.04
E/W Critical Movements					0.44	0.44
Clearance Interval					0.10	0.10
ICU					0.58	0.58
Level of Service (LOS)					A	A

Notes: V/C - Volume to Capacity Ratio

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 6
NORTH/SOUTH STREET: Miller Pkwy
EAST/WEST STREET: Los Angeles Ave
SCENARIO: Cumulative Conditions
TIME PERIOD: AM Peak Hour
COUNT DATE: 5/13/19
WORK ORDER #: 2042589300

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
AM Peak	61	10	58	10	1	15	55	1756	108	68	1298	114
Project Trips	0	0	0	0	0	0	0	4	0	0	14	0
GEOMETRY	LL	T	R		LTR		L	TT	R	LL	TTT	R

	Level of Service Calculations					
Move-	**Lanes**		**Volume**		**V/C Ratio**	
ment	Lane	Capacity	umulative	Project	Cumulative	Cumu+Project
NBL	2.0	2,880	61	61	0.02 *	0.02 *
NBT	1.0	1,600	10	10	0.01	0.01
NBR	1.0	1,600	58	58	0.04	0.04
SBL	0.0	0	10	10	0.00	0.00
SBT	1.0	1,600	1	1	0.02 *	0.02 *
SBR	0.0	0	15	15	0.01	0.01
EBL	1.0	1,600	55	55	0.03	0.03
EBT	2.0	3,200	1,756	1,760	0.55 *	0.55 *
EBR	1.0	1,600	108	108	0.07	0.07
WBL	2.0	2,880	68	68	0.02 *	0.02 *
WBT	3.0	4,800	1,298	1,312	0.27	0.27
WBR	1.0	1,600	114	114	0.07	0.07
N/S Critical Movements					0.04	0.04
E/W Critical Movements					0.57	0.57
Clearance Interval					0.10	0.10
ICU					0.71	0.71
Level of Service (LOS)					C	C

Notes: V/C - Volume to Capacity Ratio

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 6
NORTH/SOUTH STREET: Miller Pkwy
EAST/WEST STREET: Los Angeles Ave
SCENARIO: Existing Conditions
TIME PERIOD: PM Peak Hour
COUNT DATE: 5/13/19
WORK ORDER #: 2042589300

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
PM Peak	204	4	83	108	17	40	22	1235	109	101	1587	17
Project Trips	0	0	0	0	0	0	0	15	0	0	6	0
GEOMETRY	LL	T	R	LTR			L	TT	R	LL	TTT	R

	Level of Service Calculations					
Move-	**Lanes**		**Volume**		**V/C Ratio**	
ment	Lane	Capacity	Existing	Project	Existing	Ex+Project
NBL	2.0	2,880	204	204	0.07 *	0.07 *
NBT	1.0	1,600	4	4	0.00	0.00
NBR	1.0	1,600	83	83	0.05	0.05
SBL	0.0	0	108	108	0.00	0.00
SBT	1.0	1,600	17	17	0.10 *	0.10 *
SBR	0.0	0	40	40	0.03	0.03
EBL	1.0	1,600	22	22	0.01	0.01
EBT	2.0	3,200	1,235	1,250	0.39 *	0.39 *
EBR	1.0	1,600	109	109	0.07	0.07
WBL	2.0	2,880	101	101	0.04 *	0.04 *
WBT	3.0	4,800	1,587	1,593	0.33	0.33
WBR	1.0	1,600	17	17	0.01	0.01
N/S Critical Movements					0.17	0.17
E/W Critical Movements					0.43	0.43
Clearance Interval					0.10	0.10
ICU					0.70	0.70
Level of Service (LOS)					B	B

Notes: V/C - Volume to Capacity Ratio

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 6
NORTH/SOUTH STREET: Miller Pkwy
EAST/WEST STREET: Los Angeles Ave
SCENARIO: Cumulative Conditions
TIME PERIOD: PM Peak Hour
COUNT DATE: 5/13/19
WORK ORDER #: 2042589300

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
PM Peak	207	4	83	108	17	40	22	1583	111	101	2122	17
Project Trips	0	0	0	0	0	0	0	15	0	0	6	0
GEOMETRY	LL	T	R	LTR			L	TT	R	LL	TTT	R

	Level of Service Calculations					
Move-	**Lanes**		**Volume**		**V/C Ratio**	
ment	Lane	Capacity	umulative	Project	Cumulative	Cumu+Project
NBL	2.0	2,880	207	207	0.07 *	0.07 *
NBT	1.0	1,600	4	4	0.00	0.00
NBR	1.0	1,600	83	83	0.05	0.05
SBL	0.0	0	108	108	0.00	0.00
SBT	1.0	1,600	17	17	0.10 *	0.10 *
SBR	0.0	0	40	40	0.03	0.03
EBL	1.0	1,600	22	22	0.01	0.01
EBT	2.0	3,200	1,583	1,598	0.49 *	0.50 *
EBR	1.0	1,600	111	111	0.07	0.07
WBL	2.0	2,880	101	101	0.04 *	0.04 *
WBT	3.0	4,800	2,122	2,128	0.44	0.44
WBR	1.0	1,600	17	17	0.01	0.01
N/S Critical Movements					0.17	0.17
E/W Critical Movements					0.53	0.54
Clearance Interval					0.10	0.10
ICU					0.80	0.81
Level of Service (LOS)					C	D

Notes: V/C - Volume to Capacity Ratio

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 7
NORTH/SOUTH STREET: SR 23 SB Ramps
EAST/WEST STREET: Los Angeles Ave
SCENARIO: Existing Conditions
TIME PERIOD: AM Peak Hour
COUNT DATE: 5/13/19
WORK ORDER #: 2042589300

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
AM Peak	0	0	0	28	0	842	0	755	728	2	482	0
Project Trips	0	0	0	0	0	9	0	3	1	0	5	0
GEOMETRY				L		R		T TR	R	L	T	

	Level of Service Calculations					
Move-	**Lanes**		**Volume**		**V/C Ratio**	
ment	Lane	Capacity	Existing	Project	Existing	Ex+Project
NBL	0.0	0	0	0	0.00	0.00
NBT	0.0	0	0	0	0.00 *	0.00 *
NBR	0.0	0	0	0	0.00	0.00
SBL	1.0	1,600	28	28	0.02 *	0.02 *
SBT	0.0	0	0	0	0.00	0.00
SBR	1.0 (a)	1,600	842	851	0.00	0.00
EBL	0.0	0	0	0	0.00	0.00
EBT	3.0	4,800	755	758	0.31 *	0.31 *
EBR	0.0	0	728	729	0.00	0.00
WBL	1.0	1,600	2	2	0.00 *	0.00 *
WBT	1.0	1,600	482	487	0.30	0.30
WBR	0.0	0	0	0	0.00	0.00
N/S Critical Movements					0.02	0.02
E/W Critical Movements					0.31	0.31
Clearance Interval					0.10	0.10
ICU					0.43	0.43
Level of Service (LOS)					A	A

Notes: V/C - Volume to Capacity Ratio
(a) Free RT

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 7
NORTH/SOUTH STREET: SR 23 SB Ramps
EAST/WEST STREET: Los Angeles Ave
SCENARIO: Cumulative Conditions
TIME PERIOD: AM Peak Hour
COUNT DATE: 5/13/19
WORK ORDER #: 2042589300

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
AM Peak	0	0	0	47	0	1156	0	946	945	15	574	0
Project Trips	0	0	0	0	0	9	0	3	1	0	5	0
GEOMETRY				L		R		T TR	R	L	T	

	Level of Service Calculations						
Move-	**Lanes**			**Volume**		**V/C Ratio**	
ment	Lane		Capacity	umulative	Project	Cumulative	Cumu+Project
NBL	0.0		0	0	0	0.00	0.00
NBT	0.0		0	0	0	0.00 *	0.00 *
NBR	0.0		0	0	0	0.00	0.00
SBL	1.0		1,600	47	47	0.03 *	0.03 *
SBT	0.0		0	0	0	0.00	0.00
SBR	1.0	(a)	1,600	1,156	1,165	0.00	0.00
EBL	0.0		0	0	0	0.00	0.00
EBT	3.0		4,800	946	949	0.39 *	0.39 *
EBR	0.0		0	945	946	0.00	0.00
WBL	1.0		1,600	15	15	0.01 *	0.01 *
WBT	1.0		1,600	574	579	0.36	0.36
WBR	0.0		0	0	0	0.00	0.00
N/S Critical Movements						0.03	0.03
E/W Critical Movements						0.40	0.40
Clearance Interval						0.10	0.10
ICU						0.53	0.53
Level of Service (LOS)						A	A

Notes: V/C - Volume to Capacity Ratio
(a) Free RT

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 7
NORTH/SOUTH STREET: SR 23 SB Ramps
EAST/WEST STREET: Los Angeles Ave
SCENARIO: Existing Conditions
TIME PERIOD: PM Peak Hour
COUNT DATE: 5/13/19
WORK ORDER #: 2042589300

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
PM Peak	0	0	0	37	0	897	0	761	666	27	989	0
Project Trips	0	0	0	0	0	4	0	10	5	0	2	0
GEOMETRY				L		R		T TR	R	L	T	

	Level of Service Calculations					
Move-	**Lanes**		**Volume**		**V/C Ratio**	
ment	Lane	Capacity	Existing	Project	Existing	Ex+Project
NBL	0.0	0	0	0	0.00	0.00
NBT	0.0	0	0	0	0.00 *	0.00 *
NBR	0.0	0	0	0	0.00	0.00
SBL	1.0	1,600	37	37	0.02 *	0.02 *
SBT	0.0	0	0	0	0.00	0.00
SBR	1.0 (a)	1,600	897	901	0.00	0.00
EBL	0.0	0	0	0	0.00 *	0.00 *
EBT	3.0	4,800	761	771	0.30	0.30
EBR	0.0	0	666	671	0.00	0.00
WBL	1.0	1,600	27	27	0.02	0.02
WBT	1.0	1,600	989	991	0.62 *	0.62 *
WBR	0.0	0	0	0	0.00	0.00
N/S Critical Movements					0.02	0.02
E/W Critical Movements					0.62	0.62
Clearance Interval					0.10	0.10
ICU					0.74	0.74
Level of Service (LOS)					C	C

Notes: V/C - Volume to Capacity Ratio
(a) Free RT

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 7
NORTH/SOUTH STREET: SR 23 SB Ramps
EAST/WEST STREET: Los Angeles Ave
SCENARIO: Cumulative Conditions
TIME PERIOD: PM Peak Hour
COUNT DATE: 5/13/19
WORK ORDER #: 2042589300

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
PM Peak	0	0	0	47	0	1156	0	942	813	46	1265	0
Project Trips	0	0	0	0	0	4	0	10	5	0	2	0
GEOMETRY				L		R		T TR	R	L	T	

	Level of Service Calculations						
Move-	**Lanes**			**Volume**		**V/C Ratio**	
ment	Lane		Capacity	umulative	Project	Cumulative	Cumu+Project
NBL	0.0		0	0	0	0.00	0.00
NBT	0.0		0	0	0	0.00 *	0.00 *
NBR	0.0		0	0	0	0.00	0.00
SBL	1.0		1,600	47	47	0.03 *	0.03 *
SBT	0.0		0	0	0	0.00	0.00
SBR	1.0	(a)	1,600	1,156	1,160	0.00	0.00
EBL	0.0		0	0	0	0.00 *	0.00 *
EBT	3.0		4,800	942	952	0.37	0.37
EBR	0.0		0	813	818	0.00	0.00
WBL	1.0		1,600	46	46	0.03	0.03
WBT	1.0		1,600	1,265	1,267	0.79 *	0.79 *
WBR	0.0		0	0	0	0.00	0.00
N/S Critical Movements						0.02	0.02
E/W Critical Movements						0.79	0.79
Clearance Interval						0.10	0.10
ICU						0.91	0.91
Level of Service (LOS)						E	E

Notes: V/C - Volume to Capacity Ratio
(a) Free RT

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 8
NORTH/SOUTH STREET: SR 23 NB Ramps
EAST/WEST STREET: Los Angeles Ave
SCENARIO: Existing Conditions
TIME PERIOD: AM Peak Hour
COUNT DATE: 5/13/19
WORK ORDER #: 2042589300

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
AM Peak	495	0	36	0	0	0	0	43	711	3	11	0
Project Trips	5	0	0	0	0	0	0	0	3	0	0	0
GEOMETRY	LL		R					TT	RR		LT	

	Level of Service Calculations					
Move-	**Lanes**		**Volume**		**V/C Ratio**	
ment	Lane	Capacity	Existing	Project	Existing	Ex+Project
NBL	2.0	2,880	495	500	0.17 *	0.17 *
NBT	0.0	0	0	0	0.00	0.00
NBR	1.0	1,600	36	36	0.00	0.00
SBL	0.0	0	0	0	0.00	0.00
SBT	0.0	0	0	0	0.00 *	0.00 *
SBR	0.0	0	0	0	0.00	0.00
EBL	0.0	0	0	0	0.00	0.00
EBT	2.0	3,200	43	43	0.01 *	0.01 *
EBR	2.0 (a)	3,200	711	714	0.00	0.00
WBL	0.0	0	3	3	0.00	0.00
WBT	1.0	1,600	11	11	0.01 *	0.01 *
WBR	0.0	0	0	0	0.00	0.00
N/S Critical Movements					0.17	0.17
E/W Critical Movements					0.02	0.02
Clearance Interval					0.10	0.10
ICU					0.29	0.29
Level of Service (LOS)					A	A

Notes: V/C - Volume to Capacity Ratio
(a) Free RT

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 8
NORTH/SOUTH STREET: SR 23 NB Ramps
EAST/WEST STREET: Los Angeles Ave
SCENARIO: Cumulative Conditions
TIME PERIOD: AM Peak Hour
COUNT DATE: 5/13/19
WORK ORDER #: 2042589300

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
AM Peak	603	0	53	0	0	0	0	58	905	10	27	0
Project Trips	5	0	0	0	0	0	0	0	3	0	0	0
GEOMETRY	LL		R					TT	RR		LT	

	Level of Service Calculations						
Move-	**Lanes**			**Volume**		**V/C Ratio**	
ment	Lane		Capacity	umulative	Project	Cumulative	Cumu+Project
NBL	2.0		2,880	603	608	0.21 *	0.21 *
NBT	0.0		0	0	0	0.00	0.00
NBR	1.0		1,600	53	53	0.00	0.00
SBL	0.0		0	0	0	0.00	0.00
SBT	0.0		0	0	0	0.00 *	0.00 *
SBR	0.0		0	0	0	0.00	0.00
EBL	0.0		0	0	0	0.00	0.00
EBT	2.0		3,200	58	58	0.02 *	0.02 *
EBR	2.0	(a)	3,200	905	908	0.00	0.00
WBL	0.0		0	10	10	0.00	0.00
WBT	1.0		1,600	27	27	0.02 *	0.02 *
WBR	0.0		0	0	0	0.00	0.00
N/S Critical Movements						0.21	0.21
E/W Critical Movements						0.04	0.04
Clearance Interval						0.10	0.10
ICU						0.35	0.35
Level of Service (LOS)						A	A

Notes: V/C - Volume to Capacity Ratio
(a) Free RT

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 8
NORTH/SOUTH STREET: SR 23 NB Ramps
EAST/WEST STREET: Los Angeles Ave
SCENARIO: Existing Conditions
TIME PERIOD: PM Peak Hour
COUNT DATE: 5/13/19
WORK ORDER #: 2042589300

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
PM Peak	957	0	9	0	0	0	0	21	770	34	72	0
Project Trips	2	0	0	0	0	0	0	0	10	0	0	0
GEOMETRY	LL		R					TT	RR		LT	

	Level of Service Calculations					
Move-	**Lanes**		**Volume**		**V/C Ratio**	
ment	Lane	Capacity	Existing	Project	Existing	Ex+Project
NBL	2.0	2,880	957	959	0.33 *	0.33 *
NBT	0.0	0	0	0	0.00	0.00
NBR	1.0	1,600	9	9	0.00	0.00
SBL	0.0	0	0	0	0.00	0.00
SBT	0.0	0	0	0	0.00 *	0.00 *
SBR	0.0	0	0	0	0.00	0.00
EBL	0.0	0	0	0	0.00	0.00
EBT	2.0	3,200	21	21	0.01 *	0.01 *
EBR	2.0 (a)	3,200	770	780	0.00	0.00
WBL	0.0	0	34	34	0.00	0.00
WBT	1.0	1,600	72	72	0.07 *	0.07 *
WBR	0.0	0	0	0	0.00	0.00
N/S Critical Movements					0.33	0.33
E/W Critical Movements					0.08	0.08
Clearance Interval					0.10	0.10
ICU					0.51	0.51
Level of Service (LOS)					A	A

Notes: V/C - Volume to Capacity Ratio
(a) Free RT

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 8
NORTH/SOUTH STREET: SR 23 NB Ramps
EAST/WEST STREET: Los Angeles Ave
SCENARIO: Cumulative Conditions
TIME PERIOD: PM Peak Hour
COUNT DATE: 5/13/19
WORK ORDER #: 2042589300

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
PM Peak	1230	0	28	0	0	0	0	34	948	44	94	0
Project Trips	2	0	0	0	0	0	0	0	10	0	0	0
GEOMETRY	LL		R					TT	RR		LT	

	Level of Service Calculations						
Move-	**Lanes**			**Volume**		**V/C Ratio**	
ment	Lane		Capacity	umulative	Project	Cumulative	Cumu+Project
NBL	2.0		2,880	1,230	1,232	0.43 *	0.43 *
NBT	0.0		0	0	0	0.00	0.00
NBR	1.0		1,600	28	28	0.00	0.00
SBL	0.0		0	0	0	0.00	0.00
SBT	0.0		0	0	0	0.00 *	0.00 *
SBR	0.0		0	0	0	0.00	0.00
EBL	0.0		0	0	0	0.00	0.00
EBT	2.0		3,200	34	34	0.01 *	0.01 *
EBR	2.0	(a)	3,200	948	958	0.00	0.00
WBL	0.0		0	44	44	0.00	0.00
WBT	1.0		1,600	94	94	0.09 *	0.09 *
WBR	0.0		0	0	0	0.00	0.00
N/S Critical Movements						0.43	0.43
E/W Critical Movements						0.10	0.10
Clearance Interval						0.10	0.10
ICU						0.63	0.63
Level of Service (LOS)						B	B

Notes: V/C - Volume to Capacity Ratio
(a) Free RT

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 9
NORTH/SOUTH STREET: Spring Rd
EAST/WEST STREET: Tierra Rejada Rd
SCENARIO: Existing Conditions
TIME PERIOD: AM Peak Hour
COUNT DATE: 5/13/19
WORK ORDER #: 2042589300

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
AM Peak	0	0	0	569	0	73	109	1247	0	0	667	274
Project Trips	0	0	0	0	0	0	0	3	0	0	9	0
GEOMETRY				LL		R	L	TT			TT	R

	Level of Service Calculations					
Move-	**Lanes**		**Volume**		**V/C Ratio**	
ment	Lane	Capacity	Existing	Project	Existing	Ex+Project
NBL	0.0	0	0	0	0.00	0.00
NBT	0.0	0	0	0	0.00	0.00
NBR	0.0	0	0	0	0.00 *	0.00 *
SBL	2.0	2,880	569	569	0.20 *	0.20 *
SBT	0.0	0	0	0	0.00	0.00
SBR	1.0	1,600	73	73	0.05	0.05
EBL	1.0	1,600	109	109	0.07	0.07
EBT	2.0	3,200	1,247	1,250	0.39 *	0.39 *
EBR	0.0	0	0	0	0.00	0.00
WBL	0.0	0	0	0	0.00 *	0.00 *
WBT	2.0	3,200	667	676	0.21	0.21
WBR	1.0	1,600	274	274	0.17	0.17
N/S Critical Movements					0.20	0.20
E/W Critical Movements					0.39	0.39
Clearance Interval					0.10	0.10
ICU					0.69	0.69
Level of Service (LOS)					B	B

Notes: V/C - Volume to Capacity Ratio

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 9
NORTH/SOUTH STREET: Spring Rd
EAST/WEST STREET: Tierra Rejada Rd
SCENARIO: Cumulative Conditions
TIME PERIOD: AM Peak Hour
COUNT DATE: 5/13/19
WORK ORDER #: 2042589300

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
AM Peak	0	0	0	575	0	73	109	1269	0	0	706	277
Project Trips	0	0	0	0	0	0	0	3	0	0	9	0
GEOMETRY				LL		R	L	TT			TT	R

	Level of Service Calculations					
Move-	**Lanes**		**Volume**		**V/C Ratio**	
ment	Lane	Capacity	umulative	Project	Cumulative	Cumu+Project
NBL	0.0	0	0	0	0.00	0.00
NBT	0.0	0	0	0	0.00	0.00
NBR	0.0	0	0	0	0.00 *	0.00 *
SBL	2.0	2,880	575	575	0.20 *	0.20 *
SBT	0.0	0	0	0	0.00	0.00
SBR	1.0	1,600	73	73	0.05	0.05
EBL	1.0	1,600	109	109	0.07	0.07
EBT	2.0	3,200	1,269	1,272	0.40 *	0.40 *
EBR	0.0	0	0	0	0.00	0.00
WBL	0.0	0	0	0	0.00 *	0.00 *
WBT	2.0	3,200	706	715	0.22	0.22
WBR	1.0	1,600	277	277	0.17	0.17
N/S Critical Movements					0.20	0.20
E/W Critical Movements					0.40	0.40
Clearance Interval					0.10	0.10
ICU					0.70	0.70
Level of Service (LOS)					B	B

Notes: V/C - Volume to Capacity Ratio

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 9
NORTH/SOUTH STREET: Spring Rd
EAST/WEST STREET: Tierra Rejada Rd
SCENARIO: Existing Conditions
TIME PERIOD: PM Peak Hour
COUNT DATE: 5/13/19
WORK ORDER #: 2042589300

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
PM Peak	0	0	0	319	0	89	81	739	0	0	1106	525
Project Trips	0	0	0	0	0	0	0	10	0	0	4	0
GEOMETRY				LL		R	L	TT			TT	R

	Level of Service Calculations					
Move-	**Lanes**		**Volume**		**V/C Ratio**	
ment	Lane	Capacity	Existing	Project	Existing	Ex+Project
NBL	0.0	0	0	0	0.00	0.00
NBT	0.0	0	0	0	0.00	0.00
NBR	0.0	0	0	0	0.00 *	0.00 *
SBL	2.0	2,880	319	319	0.11 *	0.11 *
SBT	0.0	0	0	0	0.00	0.00
SBR	1.0	1,600	89	89	0.06	0.06
EBL	1.0	1,600	81	81	0.05 *	0.05 *
EBT	2.0	3,200	739	749	0.23	0.23
EBR	0.0	0	0	0	0.00	0.00
WBL	0.0	0	0	0	0.00	0.00
WBT	2.0	3,200	1,106	1,110	0.35 *	0.35 *
WBR	1.0	1,600	525	525	0.33	0.33
N/S Critical Movements					0.11	0.11
E/W Critical Movements					0.40	0.40
Clearance Interval					0.10	0.10
ICU					0.61	0.61
Level of Service (LOS)					B	B

Notes: V/C - Volume to Capacity Ratio

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 9
NORTH/SOUTH STREET: Spring Rd
EAST/WEST STREET: Tierra Rejada Rd
SCENARIO: Cumulative Conditions
TIME PERIOD: PM Peak Hour
COUNT DATE: 5/13/19
WORK ORDER #: 2042589300

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
PM Peak	0	0	0	323	0	89	81	777	0	0	1136	536
Project Trips	0	0	0	0	0	0	0	10	0	0	4	0
GEOMETRY				LL		R	L	TT			TT	R

	Level of Service Calculations					
Move-	**Lanes**		**Volume**		**V/C Ratio**	
ment	Lane	Capacity	umulative	Project	Cumulative	Cumu+Project
NBL	0.0	0	0	0	0.00	0.00
NBT	0.0	0	0	0	0.00	0.00
NBR	0.0	0	0	0	0.00 *	0.00 *
SBL	2.0	2,880	323	323	0.11 *	0.11 *
SBT	0.0	0	0	0	0.00	0.00
SBR	1.0	1,600	89	89	0.06	0.06
EBL	1.0	1,600	81	81	0.05 *	0.05 *
EBT	2.0	3,200	777	787	0.24	0.25
EBR	0.0	0	0	0	0.00	0.00
WBL	0.0	0	0	0	0.00	0.00
WBT	2.0	3,200	1,136	1,140	0.36 *	0.36 *
WBR	1.0	1,600	536	536	0.34	0.34
N/S Critical Movements					0.11	0.11
E/W Critical Movements					0.41	0.41
Clearance Interval					0.10	0.10
ICU					0.62	0.62
Level of Service (LOS)					B	B

Notes: V/C - Volume to Capacity Ratio

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 10
NORTH/SOUTH STREET: Miller Pkwy
EAST/WEST STREET: Tierra Rejada Rd
SCENARIO: Existing Conditions
TIME PERIOD: AM Peak Hour
COUNT DATE: 5/13/19
WORK ORDER #: 2042589300

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
AM Peak	201	0	501	146	0	111	87	1106	639	720	630	66
Project Trips	0	0	0	0	0	0	0	3	0	0	9	0
GEOMETRY	LL		RR	L		R	L	TT	R	LL	TT	R

	Level of Service Calculations						
Move-	**Lanes**			**Volume**		**V/C Ratio**	
ment	Lane		Capacity	Existing	Project	Existing	Ex+Project
NBL	2.0		2,880	201	201	0.07 *	0.07 *
NBT	0.0		0	0	0	0.00	0.00
NBR	2.0	(a)	3,200	501	501	0.16	0.16
SBL	1.0		1,600	146	146	0.09 *	0.09 *
SBT	0.0		0	0	0	0.00	0.00
SBR	1.0		1,600	111	111	0.07	0.07
EBL	1.0		1,600	87	87	0.05	0.05
EBT	2.0		3,200	1,106	1,109	0.35 *	0.35 *
EBR	1.0	(b)	1,600	537	537	0.34	0.34
WBL	2.0		2,880	720	720	0.25 *	0.25 *
WBT	2.0		3,200	630	639	0.20	0.20
WBR	1.0		1,600	66	66	0.04	0.04
N/S Critical Movements						0.16	0.16
E/W Critical Movements						0.60	0.60
Clearance Interval						0.10	0.10
ICU						0.86	0.86
Level of Service (LOS)						D	D

Notes: V/C - Volume to Capacity Ratio

(a) Not critical due to RT overlap arrow w/WB LT
(b) 16% RT overlap arrow w/NB LT

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 10
NORTH/SOUTH STREET: Miller Pkwy
EAST/WEST STREET: Tierra Rejada Rd
SCENARIO: Cumulative Conditions
TIME PERIOD: AM Peak Hour
COUNT DATE: 5/13/19
WORK ORDER #: 2042589300

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
AM Peak	201	0	501	153	0	111	87	1134	639	720	672	70
Project Trips	0	0	0	0	0	0	0	3	0	0	9	0
GEOMETRY	LL		RR	L		R	L	TT	R	LL	TT	R

	Level of Service Calculations						
Move-	**Lanes**			**Volume**		**V/C Ratio**	
ment	Lane		Capacity	umulative	Project	Cumulative	Cumu+Project
NBL	2.0		2,880	201	201	0.07 *	0.07 *
NBT	0.0		0	0	0	0.00	0.00
NBR	2.0	(a)	3,200	501	501	0.16	0.16
SBL	1.0		1,600	153	153	0.10 *	0.10 *
SBT	0.0		0	0	0	0.00	0.00
SBR	1.0		1,600	111	111	0.07	0.07
EBL	1.0		1,600	87	87	0.05	0.05
EBT	2.0		3,200	1,134	1,137	0.35 *	0.36 *
EBR	1.0	(b)	1,600	537	537	0.34	0.34
WBL	2.0		2,880	720	720	0.25 *	0.25 *
WBT	2.0		3,200	672	681	0.21	0.21
WBR	1.0		1,600	70	70	0.04	0.04
N/S Critical Movements						0.17	0.17
E/W Critical Movements						0.60	0.61
Clearance Interval						0.10	0.10
ICU						0.87	0.88
Level of Service (LOS)						D	D

Notes: V/C - Volume to Capacity Ratio

(a) Not critical due to RT overlap arrow w/WB LT
(b) 16% RT overlap arrow w/NB LT

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 10
NORTH/SOUTH STREET: Miller Pkwy
EAST/WEST STREET: Tierra Rejada Rd
SCENARIO: Existing Conditions
TIME PERIOD: PM Peak Hour
COUNT DATE: 5/13/19
WORK ORDER #: 2042589300

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
PM Peak	483	0	751	115	0	101	61	765	243	557	1071	174
Project Trips	0	0	0	0	0	0	0	10	0	0	4	0
GEOMETRY	LL		RR	L		R	L	TT	R	LL	TT	R

	Level of Service Calculations						
Move-	**Lanes**			**Volume**		**V/C Ratio**	
ment	Lane		Capacity	Existing	Project	Existing	Ex+Project
NBL	2.0		2,880	483	483	0.17 *	0.17 *
NBT	0.0		0	0	0	0.00	0.00
NBR	2.0	(a)	3,200	473	473	0.15	0.15
SBL	1.0		1,600	115	115	0.07 *	0.07 *
SBT	0.0		0	0	0	0.00	0.00
SBR	1.0		1,600	101	101	0.06	0.06
EBL	1.0		1,600	61	61	0.04	0.04
EBT	2.0		3,200	765	775	0.24 *	0.24 *
EBR	1.0		1,600	243	243	0.15	0.15
WBL	2.0		2,880	557	557	0.19 *	0.19 *
WBT	2.0		3,200	1,071	1,075	0.33	0.34
WBR	1.0		1,600	174	174	0.11	0.11
N/S Critical Movements						0.24	0.24
E/W Critical Movements						0.43	0.43
Clearance Interval						0.10	0.10
ICU						0.77	0.77
Level of Service (LOS)						C	C

Notes: V/C - Volume to Capacity Ratio

(a) 37% RT overlap arrow w/WB LT

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 10
NORTH/SOUTH STREET: Miller Pkwy
EAST/WEST STREET: Tierra Rejada Rd
SCENARIO: Cumulative Conditions
TIME PERIOD: PM Peak Hour
COUNT DATE: 5/13/19
WORK ORDER #: 2042589300

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
PM Peak	483	0	751	120	0	101	61	807	243	557	1102	186
Project Trips	0	0	0	0	0	0	0	10	0	0	4	0
GEOMETRY	LL		RR	L		R	L	TT	R	LL	TT	R

	Level of Service Calculations						
Move-	**Lanes**			**Volume**		**V/C Ratio**	
ment	Lane		Capacity	umulative	Project	Cumulative	Cumu+Project
NBL	2.0		2,880	483	483	0.17 *	0.17 *
NBT	0.0		0	0	0	0.00	0.00
NBR	2.0	(a)	3,200	473	473	0.15	0.15
SBL	1.0		1,600	120	120	0.08 *	0.08 *
SBT	0.0		0	0	0	0.00	0.00
SBR	1.0		1,600	101	101	0.06	0.06
EBL	1.0		1,600	61	61	0.04	0.04
EBT	2.0		3,200	807	817	0.25 *	0.26 *
EBR	1.0		1,600	243	243	0.15	0.15
WBL	2.0		2,880	557	557	0.19 *	0.19 *
WBT	2.0		3,200	1,102	1,106	0.34	0.35
WBR	1.0		1,600	186	186	0.12	0.12
N/S Critical Movements						0.24	0.24
E/W Critical Movements						0.44	0.45
Clearance Interval						0.10	0.10
ICU						0.78	0.79
Level of Service (LOS)						C	C

Notes: V/C - Volume to Capacity Ratio

(a) 37% RT overlap arrow w/WB LT

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 11
NORTH/SOUTH STREET: SR 23 SB Ramps
EAST/WEST STREET: Tierra Rejada Rd
SCENARIO: Existing Conditions
TIME PERIOD: AM Peak Hour
COUNT DATE: 5/13/19
WORK ORDER #: 2042589300

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
AM Peak	0	0	0	35	0	395	0	1006	883	0	925	495
Project Trips	0	0	0	0	0	0	0	1	2	0	9	0
GEOMETRY				L		R		TTT	R		TT	R

	Level of Service Calculations						
Move-	**Lanes**			**Volume**		**V/C Ratio**	
ment	Lane		Capacity	Existing	Project	Existing	Ex+Project
NBL	0.0		0	0	0	0.00 *	0.00 *
NBT	0.0		0	0	0	0.00	0.00
NBR	0.0		0	0	0	0.00	0.00
SBL	1.0		1,600	35	35	0.02	0.02
SBT	0.0		0	0	0	0.00	0.00
SBR	1.0		1,600	395	395	0.25 *	0.25 *
EBL	0.0		0	0	0	0.00 *	0.00 *
EBT	3.0		4,800	1,006	1,007	0.21	0.21
EBR	1.0	(a)	1,600	883	885	0.00	0.00
WBL	0.0		0	0	0	0.00	0.00
WBT	2.0		3,200	925	934	0.29 *	0.29 *
WBR	1.0	(a)	1,600	495	495	0.00	0.00
N/S Critical Movements						0.25	0.25
E/W Critical Movements						0.29	0.29
Clearance Interval						0.10	0.10
ICU						0.64	0.64
Level of Service (LOS)						B	B

Notes: V/C - Volume to Capacity Ratio

(a) Free RT

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 11
NORTH/SOUTH STREET: SR 23 SB Ramps
EAST/WEST STREET: Tierra Rejada Rd
SCENARIO: Cumulative Conditions
TIME PERIOD: AM Peak Hour
COUNT DATE: 5/13/19
WORK ORDER #: 2042589300

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
AM Peak	0	0	0	70	0	395	0	1027	897	0	971	495
Project Trips	0	0	0	0	0	0	0	1	2	0	9	0
GEOMETRY				L		R		TTT	R		TT	R

	Level of Service Calculations						
Move-	**Lanes**			**Volume**		**V/C Ratio**	
ment	Lane		Capacity	umulative	Project	Cumulative	Cumu+Project
NBL	0.0		0	0	0	0.00 *	0.00 *
NBT	0.0		0	0	0	0.00	0.00
NBR	0.0		0	0	0	0.00	0.00
SBL	1.0		1,600	70	70	0.04	0.04
SBT	0.0		0	0	0	0.00	0.00
SBR	1.0		1,600	395	395	0.25 *	0.25 *
EBL	0.0		0	0	0	0.00 *	0.00 *
EBT	3.0		4,800	1,027	1,028	0.21	0.21
EBR	1.0	(a)	1,600	897	899	0.00	0.00
WBL	0.0		0	0	0	0.00	0.00
WBT	2.0		3,200	971	980	0.30 *	0.31 *
WBR	1.0	(a)	1,600	495	495	0.00	0.00
N/S Critical Movements						0.25	0.25
E/W Critical Movements						0.30	0.31
Clearance Interval						0.10	0.10
ICU						0.65	0.66
Level of Service (LOS)						B	B

Notes: V/C - Volume to Capacity Ratio

(a) Free RT

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 11
NORTH/SOUTH STREET: SR 23 SB Ramps
EAST/WEST STREET: Tierra Rejada Rd
SCENARIO: Existing Conditions
TIME PERIOD: PM Peak Hour
COUNT DATE: 5/13/19
WORK ORDER #: 2042589300

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
PM Peak	0	0	0	177	0	616	0	1286	421	0	1156	202
Project Trips	0	0	0	0	0	0	0	3	7	0	4	0
GEOMETRY				L		R		TTT	R		TT	R

	Level of Service Calculations					
Move-	**Lanes**		**Volume**		**V/C Ratio**	
ment	Lane	Capacity	Existing	Project	Existing	Ex+Project
NBL	0.0	0	0	0	0.00 *	0.00 *
NBT	0.0	0	0	0	0.00	0.00
NBR	0.0	0	0	0	0.00	0.00
SBL	1.0	1,600	177	177	0.11	0.11
SBT	0.0	0	0	0	0.00	0.00
SBR	1.0	1,600	616	616	0.39 *	0.39 *
EBL	0.0	0	0	0	0.00 *	0.00 *
EBT	3.0	4,800	1,286	1,289	0.27	0.27
EBR	1.0 (a)	1,600	421	428	0.00	0.00
WBL	0.0	0	0	0	0.00	0.00
WBT	2.0	3,200	1,156	1,160	0.36 *	0.36 *
WBR	1.0 (a)	1,600	202	202	0.00	0.00
N/S Critical Movements					0.39	0.39
E/W Critical Movements					0.36	0.36
Clearance Interval					0.10	0.10
ICU					0.85	0.85
Level of Service (LOS)					D	D

Notes: V/C - Volume to Capacity Ratio

(a) Free RT

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 11
NORTH/SOUTH STREET: SR 23 SB Ramps
EAST/WEST STREET: Tierra Rejada Rd
SCENARIO: Cumulative Conditions
TIME PERIOD: PM Peak Hour
COUNT DATE: 5/13/19
WORK ORDER #: 2042589300

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
PM Peak	0	0	0	197	0	616	0	1298	456	0	1213	202
Project Trips	0	0	0	0	0	0	0	3	7	0	4	0
GEOMETRY				L		R		TTT	R		TT	R

	Level of Service Calculations						
Move-	**Lanes**			**Volume**		**V/C Ratio**	
ment	Lane		Capacity	umulative	Project	Cumulative	Cumu+Project
NBL	0.0		0	0	0	0.00 *	0.00 *
NBT	0.0		0	0	0	0.00	0.00
NBR	0.0		0	0	0	0.00	0.00
SBL	1.0		1,600	197	197	0.12	0.12
SBT	0.0		0	0	0	0.00	0.00
SBR	1.0		1,600	616	616	0.39 *	0.39 *
EBL	0.0		0	0	0	0.00 *	0.00 *
EBT	3.0		4,800	1,298	1,301	0.27	0.27
EBR	1.0	(a)	1,600	456	463	0.00	0.00
WBL	0.0		0	0	0	0.00	0.00
WBT	2.0		3,200	1,213	1,217	0.38 *	0.38 *
WBR	1.0	(a)	1,600	202	202	0.00	0.00
N/S Critical Movements						0.39	0.39
E/W Critical Movements						0.38	0.38
Clearance Interval						0.10	0.10
ICU						0.87	0.87
Level of Service (LOS)						D	D

Notes: V/C - Volume to Capacity Ratio

(a) Free RT

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 12
NORTH/SOUTH STREET: SR 23 NB Ramps
EAST/WEST STREET: Tierra Rejada Rd
SCENARIO: Existing Conditions
TIME PERIOD: AM Peak Hour
COUNT DATE: 5/13/19
WORK ORDER #: 2042589300

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
AM Peak	219	0	173	0	0	0	0	507	551	0	1189	62
Project Trips	6	0	0	0	0	0	0	1	0	0	3	0
GEOMETRY	L	LR						TT	R		TT	R

	Level of Service Calculations						
Move-	**Lanes**			**Volume**		**V/C Ratio**	
ment	Lane		Capacity	Existing	Project	Existing	Ex+Project
NBL	0.0		0	219	225	0.00	0.00
NBT	2.0		3,200	0	0	0.12 *	0.12 *
NBR	0.0		0	173	173	0.00	0.00
SBL	0.0		0	0	0	0.00	0.00
SBT	0.0		0	0	0	0.00	0.00
SBR	0.0		0	0	0	0.00 *	0.00 *
EBL	0.0		0	0	0	0.00 *	0.00 *
EBT	2.0		3,200	507	508	0.16	0.16
EBR	1.0	(a)	1,600	551	551	0.00	0.00
WBL	0.0		0	0	0	0.00	0.00
WBT	2.0		3,200	1,189	1,192	0.37 *	0.37 *
WBR	1.0	(a)	1,600	62	62	0.00	0.00
N/S Critical Movements						0.12	0.12
E/W Critical Movements						0.37	0.37
Clearance Interval						0.10	0.10
ICU						0.59	0.59
Level of Service (LOS)						A	A

Notes: V/C - Volume to Capacity Ratio

(a) Free RT

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 12
NORTH/SOUTH STREET: SR 23 NB Ramps
EAST/WEST STREET: Tierra Rejada Rd
SCENARIO: Cumulative Conditions
TIME PERIOD: AM Peak Hour
COUNT DATE: 5/13/19
WORK ORDER #: 2042589300

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
AM Peak	255	0	173	0	0	0	0	528	551	0	1199	105
Project Trips	6	0	0	0	0	0	0	1	0	0	3	0
GEOMETRY	L	LR						TT	R		TT	R

	Level of Service Calculations						
Move-	**Lanes**			**Volume**		**V/C Ratio**	
ment	Lane		Capacity	umulative	Project	Cumulative	Cumu+Project
NBL	0.0		0	255	261	0.00	0.00
NBT	2.0		3,200	0	0	0.13 *	0.14 *
NBR	0.0		0	173	173	0.00	0.00
SBL	0.0		0	0	0	0.00	0.00
SBT	0.0		0	0	0	0.00	0.00
SBR	0.0		0	0	0	0.00 *	0.00 *
EBL	0.0		0	0	0	0.00 *	0.00 *
EBT	2.0		3,200	528	529	0.17	0.17
EBR	1.0	(a)	1,600	551	551	0.00	0.00
WBL	0.0		0	0	0	0.00	0.00
WBT	2.0		3,200	1,199	1,202	0.37 *	0.38 *
WBR	1.0	(a)	1,600	105	105	0.00	0.00
N/S Critical Movements						0.13	0.13
E/W Critical Movements						0.37	0.38
Clearance Interval						0.10	0.10
ICU						0.60	0.61
Level of Service (LOS)						A	B

Notes: V/C - Volume to Capacity Ratio

(a) Free RT

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 12
NORTH/SOUTH STREET: SR 23 NB Ramps
EAST/WEST STREET: Tierra Rejada Rd
SCENARIO: Existing Conditions
TIME PERIOD: PM Peak Hour
COUNT DATE: 5/13/19
WORK ORDER #: 2042589300

VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
PM Peak	621	0	690	0	0	0	0	1187	270	0	762	75
Project Trips	3	0	0	0	0	0	0	3	0	0	1	0
GEOMETRY	L	LR						TT	R		TT	R

	Level of Service Calculations						
Move-	**Lanes**			**Volume**		**V/C Ratio**	
ment	Lane		Capacity	Existing	Project	Existing	Ex+Project
NBL	0.0		0	621	624	0.00	0.00
NBT	2.0		3,200	0	0	0.41 *	0.41 *
NBR	0.0		0	690	690	0.00	0.00
SBL	0.0		0	0	0	0.00	0.00
SBT	0.0		0	0	0	0.00	0.00
SBR	0.0		0	0	0	0.00 *	0.00 *
EBL	0.0		0	0	0	0.00	0.00
EBT	2.0		3,200	1,187	1,190	0.37 *	0.37 *
EBR	1.0	(a)	1,600	270	270	0.00	0.00
WBL	0.0		0	0	0	0.00 *	0.00 *
WBT	2.0		3,200	762	763	0.24	0.24
WBR	1.0	(a)	1,600	75	75	0.00	0.00
N/S Critical Movements						0.41	0.41
E/W Critical Movements						0.37	0.37
Clearance Interval						0.10	0.10
ICU						0.88	0.88
Level of Service (LOS)						D	D

Notes: V/C - Volume to Capacity Ratio

(a) Free RT

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NUMBER: 12
NORTH/SOUTH STREET: SR 23 NB Ramps
EAST/WEST STREET: Tierra Rejada Rd
SCENARIO: Cumulative Conditions
TIME PERIOD: PM Peak Hour
COUNT DATE: 5/13/19
WORK ORDER #: 2042589300

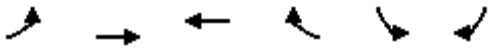
VOLUMES	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
PM Peak	645	0	690	0	0	0	0	1199	270	0	791	93
Project Trips	3	0	0	0	0	0	0	3	0	0	1	0
GEOMETRY	L	LR						TT	R		TT	R

	Level of Service Calculations						
Move-	**Lanes**			**Volume**		**V/C Ratio**	
ment	Lane		Capacity	umulative	Project	Cumulative	Cumu+Project
NBL	0.0		0	645	648	0.00	0.00
NBT	2.0		3,200	0	0	0.42 *	0.42 *
NBR	0.0		0	690	690	0.00	0.00
SBL	0.0		0	0	0	0.00	0.00
SBT	0.0		0	0	0	0.00	0.00
SBR	0.0		0	0	0	0.00 *	0.00 *
EBL	0.0		0	0	0	0.00	0.00
EBT	2.0		3,200	1,199	1,202	0.37 *	0.38 *
EBR	1.0	(a)	1,600	270	270	0.00	0.00
WBL	0.0		0	0	0	0.00 *	0.00 *
WBT	2.0		3,200	791	792	0.25	0.25
WBR	1.0	(a)	1,600	93	93	0.00	0.00
N/S Critical Movements						0.42	0.42
E/W Critical Movements						0.37	0.38
Clearance Interval						0.10	0.10
ICU						0.89	0.90
Level of Service (LOS)						D	D

Notes: V/C - Volume to Capacity Ratio

(a) Free RT

Los Angeles Ave/Montair Dr Intersection
HCM Level of Service Calculations



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	21	780	712	73	12	6
Future Volume (veh/h)	21	780	712	73	12	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	23	848	774	79	13	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	4	4	4	4
Cap, veh/h	49	1206	965	818	144	78
Arrive On Green	0.03	0.66	0.52	0.52	0.14	0.14
Sat Flow, veh/h	1753	1841	1841	1560	1044	562
Grp Volume(v), veh/h	23	848	774	79	21	0
Grp Sat Flow(s),veh/h/ln	1753	1841	1841	1560	1687	0
Q Serve(g_s), s	0.6	12.8	15.0	1.1	0.5	0.0
Cycle Q Clear(g_c), s	0.6	12.8	15.0	1.1	0.5	0.0
Prop In Lane	1.00			1.00	0.62	0.33
Lane Grp Cap(c), veh/h	49	1206	965	818	233	0
V/C Ratio(X)	0.47	0.70	0.80	0.10	0.09	0.00
Avail Cap(c_a), veh/h	201	1903	1501	1272	233	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	20.8	4.8	8.5	5.2	16.4	0.0
Incr Delay (d2), s/veh	6.9	0.8	1.8	0.1	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.3	4.3	0.3	0.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	27.7	5.5	10.3	5.2	17.2	0.0
LnGrp LOS	C	A	B	A	B	A
Approach Vol, veh/h		871	853		21	
Approach Delay, s/veh		6.1	9.8		17.2	
Approach LOS		A	A		B	

Timer - Assigned Phs			4		6	7	8
Phs Duration (G+Y+Rc), s			33.0		10.5	5.7	27.3
Change Period (Y+Rc), s			4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s			45.0		6.0	5.0	35.5
Max Q Clear Time (g_c+I1), s			14.8		2.5	2.6	17.0
Green Ext Time (p_c), s			7.6		0.0	0.0	5.8

Intersection Summary	
HCM 6th Ctrl Delay	8.1
HCM 6th LOS	A

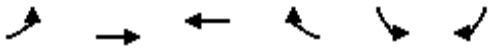
Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	23	848	774	79	20
v/c Ratio	0.10	0.76	0.73	0.08	0.08
Control Delay	22.5	10.1	11.3	1.7	18.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	22.5	10.1	11.3	1.7	18.0
Queue Length 50th (ft)	5	99	84	0	2
Queue Length 95th (ft)	27	173	294	14	22
Internal Link Dist (ft)		1065	1090		470
Turn Bay Length (ft)	200			100	
Base Capacity (vph)	223	1736	1577	1351	266
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.10	0.49	0.49	0.06	0.08

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	21	853	843	73	12	6
Future Volume (veh/h)	21	853	843	73	12	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	23	927	916	79	13	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	4	4	4	4
Cap, veh/h	48	1287	1068	905	123	66
Arrive On Green	0.03	0.70	0.58	0.58	0.12	0.12
Sat Flow, veh/h	1753	1841	1841	1560	1044	562
Grp Volume(v), veh/h	23	927	916	79	21	0
Grp Sat Flow(s),veh/h/ln	1753	1841	1841	1560	1687	0
Q Serve(g_s), s	0.6	15.0	20.5	1.1	0.5	0.0
Cycle Q Clear(g_c), s	0.6	15.0	20.5	1.1	0.5	0.0
Prop In Lane	1.00			1.00	0.62	0.33
Lane Grp Cap(c), veh/h	48	1287	1068	905	199	0
V/C Ratio(X)	0.48	0.72	0.86	0.09	0.11	0.00
Avail Cap(c_a), veh/h	178	1692	1336	1133	199	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	23.6	4.5	8.6	4.6	19.4	0.0
Incr Delay (d2), s/veh	7.2	1.0	4.8	0.0	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.7	6.6	0.2	0.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	30.8	5.5	13.4	4.6	20.4	0.0
LnGrp LOS	C	A	B	A	C	A
Approach Vol, veh/h		950	995		21	
Approach Delay, s/veh		6.1	12.7		20.4	
Approach LOS		A	B		C	

Timer - Assigned Phs			4		6	7	8
Phs Duration (G+Y+Rc), s			38.9		10.3	5.8	33.0
Change Period (Y+Rc), s			4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s			45.2		5.8	5.0	35.7
Max Q Clear Time (g_c+I1), s			17.0		2.5	2.6	22.5
Green Ext Time (p_c), s			8.6		0.0	0.0	6.1

Intersection Summary	
HCM 6th Ctrl Delay	9.6
HCM 6th LOS	A

Notes

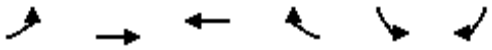
User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	23	927	916	79	20
v/c Ratio	0.11	0.78	0.81	0.08	0.09
Control Delay	24.2	10.2	14.5	1.9	19.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	24.2	10.2	14.5	1.9	19.4
Queue Length 50th (ft)	5	116	112	1	3
Queue Length 95th (ft)	27	207	#489	15	22
Internal Link Dist (ft)		1065	1090		470
Turn Bay Length (ft)	200			100	
Base Capacity (vph)	203	1698	1478	1269	234
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.11	0.55	0.62	0.06	0.09

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	9	936	836	20	66	31
Future Volume (veh/h)	9	936	836	20	66	31
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	10	1017	909	22	72	34
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	4	4	4	4
Cap, veh/h	23	1263	1065	903	143	67
Arrive On Green	0.01	0.69	0.58	0.58	0.13	0.13
Sat Flow, veh/h	1753	1841	1841	1560	1135	536
Grp Volume(v), veh/h	10	1017	909	22	107	0
Grp Sat Flow(s),veh/h/ln	1753	1841	1841	1560	1687	0
Q Serve(g_s), s	0.3	18.5	19.6	0.3	2.8	0.0
Cycle Q Clear(g_c), s	0.3	18.5	19.6	0.3	2.8	0.0
Prop In Lane	1.00			1.00	0.67	0.32
Lane Grp Cap(c), veh/h	23	1263	1065	903	212	0
V/C Ratio(X)	0.44	0.81	0.85	0.02	0.50	0.00
Avail Cap(c_a), veh/h	183	1734	1368	1159	212	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	23.4	5.3	8.4	4.3	19.5	0.0
Incr Delay (d2), s/veh	12.7	2.0	4.4	0.0	8.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	3.6	6.2	0.1	1.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	36.1	7.3	12.7	4.3	27.8	0.0
LnGrp LOS	D	A	B	A	C	A
Approach Vol, veh/h		1027	931		107	
Approach Delay, s/veh		7.6	12.5		27.8	
Approach LOS		A	B		C	

Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	37.3	10.5	5.1	32.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	45.0	6.0	5.0	35.5
Max Q Clear Time (g_c+I1), s	20.5	4.8	2.3	21.6
Green Ext Time (p_c), s	9.5	0.0	0.0	6.0

Intersection Summary	
HCM 6th Ctrl Delay	10.9
HCM 6th LOS	B

Notes

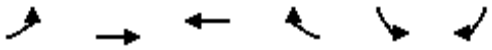
User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	10	1017	909	22	106
v/c Ratio	0.05	0.83	0.78	0.02	0.42
Control Delay	24.7	12.5	13.4	2.5	23.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	24.7	12.5	13.4	2.5	23.9
Queue Length 50th (ft)	3	144	114	0	19
Queue Length 95th (ft)	16	269	#485	7	#78
Internal Link Dist (ft)		1065	1090		470
Turn Bay Length (ft)	200			100	
Base Capacity (vph)	192	1645	1488	1268	251
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.05	0.62	0.61	0.02	0.42

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	9	1110	934	20	66	31
Future Volume (veh/h)	9	1110	934	20	66	31
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	10	1207	1015	22	72	34
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	4	4	4	4
Cap, veh/h	23	1354	1185	1004	120	57
Arrive On Green	0.01	0.74	0.64	0.64	0.11	0.11
Sat Flow, veh/h	1753	1841	1841	1560	1135	536
Grp Volume(v), veh/h	10	1207	1015	22	107	0
Grp Sat Flow(s),veh/h/ln	1753	1841	1841	1560	1687	0
Q Serve(g_s), s	0.3	28.6	24.9	0.3	3.4	0.0
Cycle Q Clear(g_c), s	0.3	28.6	24.9	0.3	3.4	0.0
Prop In Lane	1.00			1.00	0.67	0.32
Lane Grp Cap(c), veh/h	23	1354	1185	1004	178	0
V/C Ratio(X)	0.44	0.89	0.86	0.02	0.60	0.00
Avail Cap(c_a), veh/h	154	1621	1313	1113	178	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	27.8	5.8	8.0	3.7	24.2	0.0
Incr Delay (d2), s/veh	13.1	5.8	5.4	0.0	14.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	6.8	8.0	0.1	2.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.9	11.6	13.4	3.7	38.3	0.0
LnGrp LOS	D	B	B	A	D	A
Approach Vol, veh/h		1217	1037		107	
Approach Delay, s/veh		11.8	13.2		38.3	
Approach LOS		B	B		D	

Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	46.3	10.5	5.2	41.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	50.0	6.0	5.0	40.5
Max Q Clear Time (g_c+I1), s	30.6	5.4	2.3	26.9
Green Ext Time (p_c), s	11.2	0.0	0.0	6.9

Intersection Summary	
HCM 6th Ctrl Delay	13.6
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	10	1207	1015	22	106
v/c Ratio	0.06	0.90	0.79	0.02	0.51
Control Delay	29.0	17.2	13.0	2.3	32.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	29.0	17.2	13.0	2.3	32.2
Queue Length 50th (ft)	4	224	143	1	30
Queue Length 95th (ft)	17	#650	#590	7	#89
Internal Link Dist (ft)		1065	1090		470
Turn Bay Length (ft)	200			100	
Base Capacity (vph)	154	1552	1422	1212	206
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.06	0.78	0.71	0.02	0.51

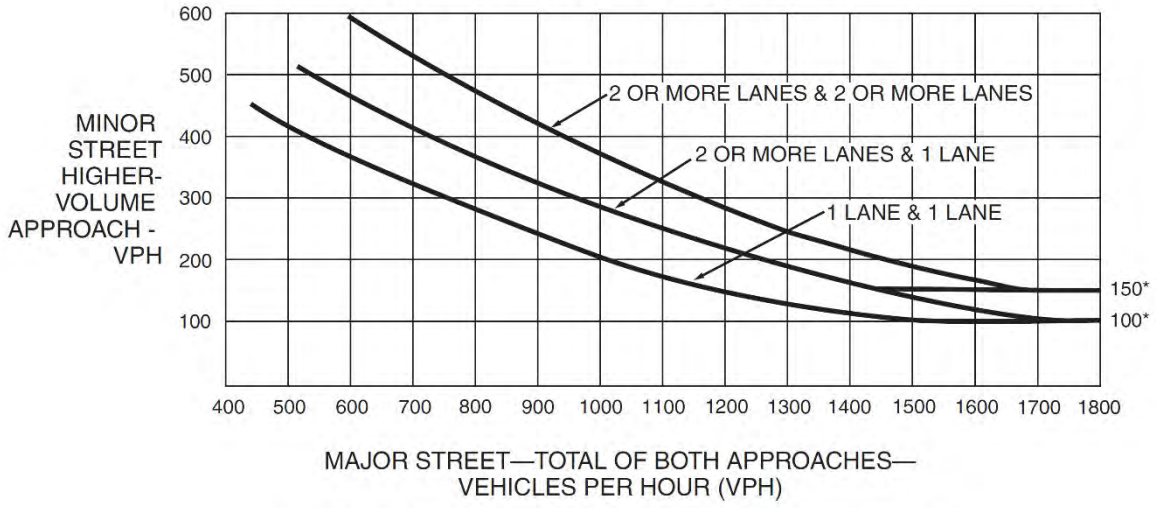
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Appendix 4

Traffic Signal Warrant Worksheets

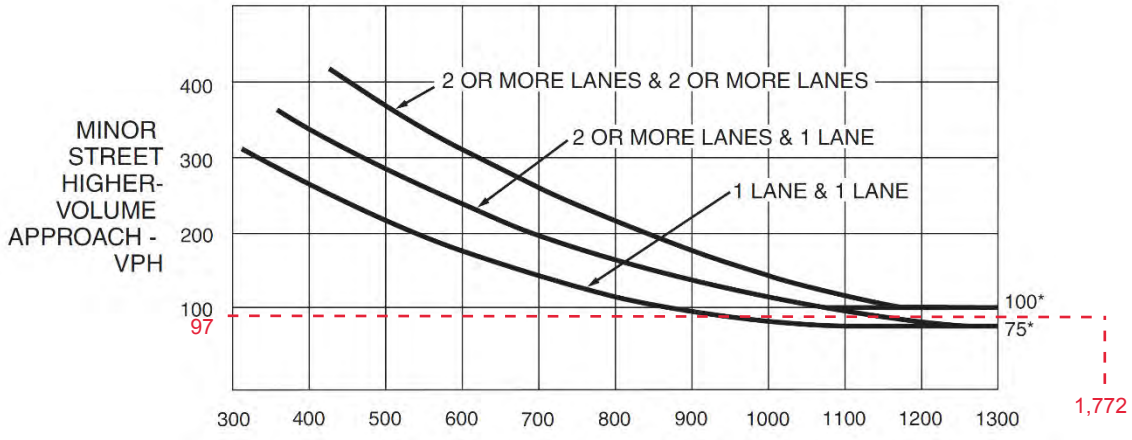
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ☐**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	Hour			
Both Approaches - Major Street						
Higher Approach - Minor Street						

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐	No ☐
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☐	No ☐

WARRANT 3 - Peak Hour **SATISFIED YES ☒ NO ☐**
(Part A or Part B must be satisfied)

PART A **SATISFIED YES ☐ NO ☒**

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☒	No ☐
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☐	No ☒
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☒	No ☐

PART B **SATISFIED YES ☒ NO ☐**

APPROACH LANES	One	2 or More	Hour
Both Approaches - Major Street	X		1,772
Higher Approach - Minor Street	X		97

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐	No ☐
OR, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☒	No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Cumulative Development Projects Trip Generation

Project	Land Use	Size	ADT	A.M. Peak Hour	P.M. Peak Hour	Note
Triliad Development	Movie Studio	37 Acres	3,108	174	168	Approved
Pacific Communities	Single Family Residential	283 Units	2,694	212	283	Approved
Essex Moorpark, LLC	Multi-Family Residential	200 Units	1,318	92	57	Approved
Spring Road, LLC	Condominiums	95 Units	552	42	49	Approved
City Ventures	Single Family Residential	110 Units	1,047	82	110	Approved
Oakmont Senior Living	Senior Residential	77 units/beds	170	6	14	Approved/Under Construction
Birdsall Group, LLC	Single Family Residential	21 Units	200	16	12	Approved
Aldersgate Senior Housing	Senior Residential	390 Units	1,468	90	125	Approved
High Street Depot/Daly Group	Downtown Mixed-Use	13,656 sf retail and 79 apartments	1,725	78	147	Approved
Grand Moorpark/Kozar	Condominiums	63 Units	383	29	34	Approved
John C. Chiu, FLP-N	Condominiums	60 Units	349	26	31	Proposed
Beltramo Ranch	Single Family Res	52 units	490	36	49	Proposed
AHA Scattered Sites	Multi-family	56 units	377	22	29	Proposed
Hitch Ranch	Single and Multi-Family	755 units	6,327	453	585	Proposed
Moorpark 67/Rasmussen	Single Family Residential	139 Units	1,311	97	131	Proposed
**Amazon Distribution Center	Industrial	Reuse of 189,364 sf industrial	994	-17	12	Under Construction
*National Ready Mix	Batch Plant	10 acres	600	20	20	Unknown
***CEMEX	Quarry	N/A	980	276	148	Unknown
***Wayne J. Sand & Gravel	Quarry	N/A	504	92	34	Unknown
***Grimes Rock	Quarry	N/A	480	35	14	Unknown
Total Trips						

*No proposal to change or expand operations. Existing use creates significant truck traffic through Moorpark.

**Trip calculations include baseline of existing industrial use (site is developed). ADT is a gross figure and A.M./P.M. are net figures based on previous use.

***Operations under County jurisdiction but bring significant truck traffic through Moorpark. Please contact Ventura County to determine whether any active permits for expansion are being reviewed or processed.

City of Moorpark, Community Development Department
799 Moorpark Avenue, Moorpark, CA 93021, 805-517-6230
LAND USE AND DEVELOPMENT PROJECTS

QUARTERLY STATUS REPORT FOR JULY 2021

This Report is Available on the City's Webpage - www.moorparkca.gov

APPLICANT / DEVELOPER	COMMON PROJECT NAME	CASE PLANNER	SUBMITTAL DATE	APPLICATION COMPLETE OR INCOMPLETE	SITE ADDRESS OR LOCATION	PERMIT(S)	CEQA STATUS	APPLICATION STATUS	PROJECT DESCRIPTION	ACRES (APPX.)
RESIDENTIAL PROJECTS – IN REVIEW										
THE DALY GROUP VINCE DALY 31255 CEDAR VALLEY DRIVE #323 WESTLAKE VILLAGE, CA 91361 805-309-6100 vincedaly@icloud.com	HIGH STREET STATION	DOUG SPONDELLO dspondello@moorparkca.gov (805) 517-6251	09/6/2018	COMPLETE	226 HIGH STREET	RPD 2018-01 DA 2018-01 DDA 2018-01	MITIGATED NEGATIVE DECLARATION	APPROVED 10/7/20	79 APARTMENTS AND 13,656 SQUARE FEET COMMERCIAL MIXED USE	2.15
HITCH RANCH PARTNERS C/O DPS: DENNIS HARDGRAVE 651 VIA ALONDRA #714 CAMARILLO, CA 93012 805-484-8303 dennis@devplan.net COMSTOCK HOMES HARRIET RAPISTA 2301 ROSECRANS AVE #1150 EL SEGUNDO, CA 90245 310-546-5781 X235 Hrapista@Comstock-homes.com	HITCH RANCH SPECIFIC PLAN SPECIFIC PLAN AREA 1	DOUG SPONDELLO dspondello@moorparkca.gov (805) 517-6251	01/17/2019	INCOMPLETE	NORTH OF UNION PACIFIC RAILROAD TRACKS AND WEST OF TERMINUS OF CASEY ROAD	SP No. 1 / 2019-01 TTM 2019-01 RPD 2019-01 ZC 2019-01 GPA 2020-01 DA 2019-01	ENVIRONMENTAL IMPACT REPORT (IN PROCESS)	IN REVIEW PROCESS	SPECIFIC PLAN INCLUDING 755 SINGLE AND MULTI-FAMILY RESIDENCES, OPEN SPACE, MANUFACTURED SLOPES, DETENTION BASINS, PRIVATE RECREATION, PUBLIC PARK	277
JOHN C. CHIU, FLP-N C/O JOHN NEWTON 159 MOONSONG COURT MOORPARK, CA 93021 805-529-3494 newtoncnslt@msn.com	EVERETT STREET TERRACES	SHANNA FARLEY-JUDKINS sfarley-judkins@moorparkca.gov (805) 517-6236	12/05/2005	COMPLETE	NORTHEAST CORNER OF EVERETT STREET AND WALNUT CANYON ROAD	RPD 2005-02 GPA 2005-02 ZC 2005-02 TTM 5739 DA 2005-04 SPA No. 4 to DTSP 95-1	INITIAL STUDY (IN PROCESS)	IN REVIEW PROCESS	60 CONDOMINIUM RESIDENCES	2.43
WEST POINTE HOMES MOORPARK 67, LLC JAMES RASMUSSEN 26500 WEST AGOURA ROAD #652 CALABASAS, CA 91302 805-370-0165 james@rasmussendevelopment.com	NORTH RANCH	SARAH LEJEUNE slejeune@rinconconsultants.com	10/31/2016	INCOMPLETE	5979 GABBERT ROAD	RPD 2016-02 GPA 2016-02 ZC 2016-02 TTM 5847 VTTM 5847 DA 2016-02	INITIAL STUDY (IN PROCESS)	IN REVIEW PROCESS	134 SINGLE FAMILY HOMES AND 5 ESTATE LOTS	68.26
JOE OFTELIE WARMINGTON RESIDENTIAL 3090 PULLMAN STREET COSTA MESA, CA 92626 (714)557-5511 joftelie@warmingtongroup.com	BELTRAMO RANCH	PETER LYONS plyons@moorparkca.gov (818) 642-6458	06/04/2021	PENDING	SOUTH OF LOS ANGELES AVENUE, EAST OF TIERRA REJADA ROAD, AND WEST OF MAUREEN LANE	GPA 2021-01 DA 2021-01 ZCH 2021-01 VTTM 2021-01 RPD 2021-01	PENDING	IN REVIEW PROCESS	NEW RESIDENTIAL COMMUNITY CONSISTING OF 47 SINGLE-FAMILY DETACHED HOMES AND PROGRAMMED OPEN SPACE AREAS.	7.42

City of Moorpark, Community Development Department
799 Moorpark Avenue, Moorpark, CA 93021, 805-517-6230
LAND USE AND DEVELOPMENT PROJECTS
QUARTERLY STATUS REPORT FOR JULY 2021
This Report is Available on the City's Webpage - www.moorparkca.gov

APPLICANT / DEVELOPER	COMMON PROJECT NAME	CASE PLANNER	SUBMITTAL DATE	APPLICATION COMPLETE OR INCOMPLETE	SITE ADDRESS OR LOCATION	PERMIT(S)	CEQA STATUS	APPLICATION STATUS	PROJECT DESCRIPTION	ACRES (APPX.)
RESIDENTIAL PROJECTS – APPROVED, NOT YET UNDER CONSTRUCTION										
ALDERSGATE INVESTMENT, LLC ERNEST MANSI / MATT MANSI 300 ESPLANADE DRIVE #430 OXNARD, CA 93036 805-988-4114 ernie@aldersgatehome.com	CASEY ROAD SENIOR COMMUNITY	DOUG SPONDELLO dspondello@moorparkca.gov (805) 517-6251	09/3/2013	N/A	NORTH OF CASEY ROAD AND WEST OF WALNUT CANYON ROAD	RPD 2013-01 GPA 2013-02 ZC 2013-02 DA 2013-01	MITIGATED NEGATIVE DECLARATION	APPROVED 03/6/2019	390-UNIT SENIOR RETIREMENT COMMUNITY	50
BIRDSALL GROUP, LLC SCOTT BIRDSALL 2300 ALESSANDRO DRIVE VENTURA, CA 93001 805-643-3200 scott@birdsall.io	CANYON CREST	DOUG SPONDELLO dspondello@moorparkca.gov (805) 517-6251	08/13/2004	N/A	MARINE VIEW DRIVE, EAST OF WALNUT CANYON ROAD AT CHAMPIONSHIP DRIVE	RPD 2004-05 GPA 2004-03 ZC 2004-02 VTTM 5347 DA 2006-01	MITIGATED NEGATIVE DECLARATION	APPROVED 03/17/2006	21 SINGLE FAMILY RESIDENCES	42
CITY VENTURES MICHELLE THRAKULCHAVEE 3121 MICHELSON DRIVE #150 IRVINE, CA 92612 949-258-7536 michellet@cityventures.com	VISTAS AT MOORPARK	FREDDY CARRILLO fcarrillo@moorparkca.gov (805) 517-6224	05/06/1998	N/A	EAST OF WALNUT CANYON ROAD, NORTH OF WICKS ROAD	RPD 2014-01 GPA 1998-01 ZC 1998-01 VTTM 5130 DA 1998-03	MITIGATED NEGATIVE DECLARATION	APPROVED 03/18/2015	110 SINGLE FAMILY RESIDENCES	72
ESSEX MOORPARK, L.P. BOB LINDER 17461 DERIAN AVE #110 IRVINE, CA, 92614 949-929-8407 blinder@essex.com	ESSEX MOORPARK APARTMENTS	FREDDY CARRILLO fcarrillo@moorparkca.gov (805) 517-6224	09/24/2004	N/A	SOUTH OF CASEY ROAD AND WEST OF WALNUT CANYON ROAD	RPD 2012-02 GPA 2004-05 ZC 2004-04 DA	MITIGATED NEGATIVE DECLARATION	APPROVED 03/01/2017	200 APARTMENT RESIDENCES	11
			06/07/2021	N/A		FIRST AMENDMENT TO DA	EXEMPT	UNDER REVIEW	200 APARTMENT RESIDENCES ALL AFFORDABLE	
PACIFIC COMMUNITIES NELSON CHUNG 1000 DOVE STREET #100 NEWPORT BEACH, CA 92660 949-660-8988 nelson@pcbinc.com	PACIFIC ARROYO • VERBENA (Detached Townhouses) • FUCHSIA (Single-Family Detached)	SHANNA FARLEY-JUDKINS sfarley-judkins@moorparkca.gov (805) 517-6236	04/15/2016	N/A	SOUTH OF LOS ANGELES AVENUE AND EAST OF MAUREEN LANE	RPD 2016-01 GPA 2016-01 ZC 2016-01 VTTM 5882 DA 2016-01	MITIGATED NEGATIVE DECLARATION	APPROVED 09/20/2017	284 SINGLE FAMILY RESIDENCES	37.09
SPRING ROAD, LLC MIKE ASHLEY/DON DUNCAN 5300 WHITMAN ROAD, HIDDEN HILLS, CA 91302 818-888-6469 mike@aci5300.com	DUNCAN/ASHLEY 4875 SPRING ROAD	FREDDY CARRILLO fcarrillo@moorparkca.gov (805) 517-6224	11/17/2015	N/A	4875 SPRING ROAD AND 384 LOS ANGELES AVENUE	RPD 2015-02 GPA 2015-02 ZC 2015-03 VTTM 5972 DA 2015-01	MITIGATED NEGATIVE DECLARATION	APPROVED 12/06/2017	95 UNIT TOWNHOUSE CONDOMINIUM	8

City of Moorpark, Community Development Department
799 Moorpark Avenue, Moorpark, CA 93021, 805-517-6230
LAND USE AND DEVELOPMENT PROJECTS
QUARTERLY STATUS REPORT FOR JULY 2021
This Report is Available on the City's Webpage - www.moorparkca.gov

APPLICANT / DEVELOPER	COMMON PROJECT NAME	CASE PLANNER	SUBMITTAL DATE	APPLICATION COMPLETE OR INCOMPLETE	SITE ADDRESS OR LOCATION	PERMIT(S)	CEQA STATUS	APPLICATION STATUS	PROJECT DESCRIPTION	ACRES (APPX.)
MENASHE KOZAR 12725 VENTURA BLVD. SUITE D STUDIO CITY, CA 91604 818-927-4130 manny@summerlandpartners.com	GREEN ISLAND VILLAS	FREDDY CARRILLO fcarrillo@moorparkca.gov (805) 517-6224	10/10/2014	N/A	635 LOS ANGELES AVENUE	RPD 2014-02 GPA 2014-01 ZC 2014-01 TT 5869 DA 2014-03	NEGATIVE DECLARATION	APPROVED 02/19/2020	69 TOWNHOUSE CONDOMINIUMS	4
			11/13/2020	UNDER REVIEW		MOD 1 TO RPD 2014-02 FIRST AMENDMENT TO DA 2014-03	EXEMPT	MOD 1 TO RPD 2014-02 UNDER REVIEW	63 TOWNHOUSE CONDOMINIUMS	
RESIDENTIAL PROJECTS – UNDER CONSTRUCTION										
OAKMONT SENIOR LIVING ATTN: JAMES LAWSON, AICP 9240 OLD REDWOOD HIGHWAY, SUITE 200 WINDSOR, CA 95492 james.lawson@oakmontsl.com	OAKMONT SENIOR LIVING	DOUG SPONDELLO dspondello@moorparkca.gov (805) 517-6251	04/20/2018	N/A	13960 PEACH HILL ROAD	CPD 2018-01	MITIGATED NEGATIVE DECLARATION	UNDER CONSTRUCTION	77 UNIT SENIOR LIVING FACILITY	2.78
COMMERCIAL / INDUSTRIAL / OTHER PROJECTS – IN REVIEW										
ABDUL SALEHI 14711 DARTHMOUTH CIRCLE TUSTIN, CA 92780 (949) 701-3346 abdul.salehi@twc.com	13816 PRINCETON AVENUE	SHANNA FARLEY-JUDKINS sfarley-judkins@moorparkca.gov (805) 517-6236	08/05/2020	COMPLETE	13816 PRINCETON AVENUE	CPD 2020-01 CUP 2020-04	EXEMPT FROM CEQA	IN REVIEW	DEVELOP A 6,186 SQ. FT. AUTO REPAIR SHOP	0.57
DOUG HINRICHS 18831 BARDEEN AVENUE, ST 100 IRVINE, CA 92612 (949) 862-2135 Doug.hinrichs@hparchs.com	DCX6- AMAZON	PHILIP NEUMANN pneumann@moorparkca.gov (805) 517-6230	01/28/2020	COMPLETE	6000 CONDOR DRIVE	CUP 2020-01	MITIGATED NEGATIVE DECLARATION	APPROVED 05/25/2021	CONVERSION OF AN EXISTING INDUSTRIAL BUILDING INTO A 189,364 SQ.FT. DISTRIBUTION AND TRANSPORTATION FACILITY	11.78
SHIMON HEIDINGSFELD 6061 GABBERT ROAD MOORPARK, CA 93021 (805) 807-8634 Rabbi@jewishmoorpark.com	SYNAGOGUE AND JEWISH CENTER	FREDDY CARRILLO fcarrillo@moorparkca.gov (805) 517-6224	06/24/2020	INCOMPLETE	6061 GABBERT ROAD	CUP 2020-03	EXEMPT FROM CEQA	IN REVIEW PROCESS	SYNAGOGUE AND JEWISH CENTER	5.5
TOM SCHLENDER 774 WILDWOOD AVENUE THOUSAND OAKS, CA 91360 (805) 231-7300	WAREHOUSE DISCOUNT CENTER DEVELOPMENT AGREEMENT AMENDMENT	PETER LYONS plyons@moorparkca.gov (818) 642-6458	5/4/2020	N/A	14349 WHITE SAGE ROAD	AMENDMENT 1 TO DA 2004-02	PENDING	INITIAL STUDY (IN PROCESS)	DA AMENDMENT TO CONSIDER EXPANDED USES ALLOWED ON SITE	6.08

City of Moorpark, Community Development Department
799 Moorpark Avenue, Moorpark, CA 93021, 805-517-6230
LAND USE AND DEVELOPMENT PROJECTS
QUARTERLY STATUS REPORT FOR JULY 2021
This Report is Available on the City's Webpage - www.moorparkca.gov

APPLICANT / DEVELOPER	COMMON PROJECT NAME	CASE PLANNER	SUBMITTAL DATE	APPLICATION COMPLETE OR INCOMPLETE	SITE ADDRESS OR LOCATION	PERMIT(S)	CEQA STATUS	APPLICATION STATUS	PROJECT DESCRIPTION	ACRES (APPX.)
TOMS@WDCAPPLICANCES.COM										
COMMERCIAL / INDUSTRIAL / OTHER PROJECTS – APPROVED, NOT YET UNDER CONSTRUCTION										
A-B PROPERTIES C/O JOHN NEWTON 159 MOONSONG COURT MOORPARK, CA 93021 805-529-3494 newtoncnslt@msn.com	TENTATIVE TRACT NO. 5906 (A RESUBDIVISION OF TRACT 5147)	FREDDY CARRILLO fcarrillo@moorparkca.gov (805) 517-6224	08/17/2012	N/A	NORTH OF UNION PACIFIC RAILROAD TRACKS, WEST OF GABBERT ROAD	TT 5906 (PRIOR TR 5147)	MITIGATED NEGATIVE DECLARATION	FINAL MAP APPROVED	17 LOT INDUSTRIAL SUBDIVISION	36
TRILIAD DEVELOPMENT VALERIE DRAEGER 270 CONEJO RIDGE AVENUE #200 THOUSAND OAKS, CA 91361 (805) 379-9800 mail@triliad.com	MOORPARK WEST STUDIOS	SHANNA FARLEY-JUDKINS sfarley-judkins@moorparkca.gov (805) 517-6236	03/23/2009	N/A	LOS ANGELES AVENUE, WEST OF SCE SUBSTATION	IPD 2009-01 GPA 2009-01 ZC 2009-01 DA 2009-02	MITIGATED NEGATIVE DECLARATION	APPROVED 10/05/2011	MOTION PICTURE STUDIO COMPLEX	37
NEARON,NICK RINI 101 YGNACIO VALLEY ROAD, SUITE 450 WALNUT CREEK, CA 94596 (925) 743-3300 NRini@nearon.com	NEARON	FREDDY CARRILLO fcarrillo@moorparkca.gov (805) 517-6224	04/12/2017	N/A	400 SCIENCE DRIVE	TPM 2016-01 IPD 2017-01	EXEMPT FROM CEQA	APPROVED 12/6/2017	35,330 SQUARE-FOOT INDUSTRIAL BUILDING	2.2
PAUL MINOO 4M INVESTMENT CORPORTATION 6222 WILSHIRE BLVD, SUITE 270 LOS ANGELES, CA 90048 (213) 624.4040 x100 paul@4minvestment.com	5850 CONDOR DRIVE	FREDDY CARRILLO fcarrillo@moorparkca.gov (805) 517-6224	11/19/2019 10/30/2020	N/A COMPLETE	5850 CONDOR DRIVE	IPD 2019-01 CUP 2020-02 MOD 1 TO IPD 2019-01 AND CUP 2020-02	EXEMPT FROM CEQA	APPROVED 07/15/2020 MOD 1 TO IPD 2019-02 and CUP 2020-02	48,211 SQ. FT. INDUSTRIAL BUILDING UNDERGROUNDING OF UTILITY POLES AND SKYLIGHTS	3.5
MARK OSSOLA 25410 CUMBERLAND LANE CALABASAS, CA 91302 818-880-6541 mossola@aol.com	PATRIOT COMMERCE CENTER	FREDDY CARRILLO fcarrillo@moorparkca.gov (805) 517-6224	02/27/2000	N/A	WEST OF SR-23 FWY, EAST OF MILLER PARKWAY, SOUTH OF MOORPARK MARKETPLACE	IPD 2000-01	ENVIRONMENTAL IMPACT REPORT	APPROVED 03/19/2003	94,001 SQ. FT. INDUSTRIAL BUILDING BUILDING A	2.59

Stantec

Memo

To:	Doug Spondello, AICP Community Development Department City of Moorpark	From:	Daryl Zerfass and Maria Morris Stantec
File:	2042614012	Date:	March 31, 2022

Reference: Pentair Warehouse Building Project VMT Analysis

Stantec Consulting Service Inc. (Stantec) has prepared a Vehicle Miles of Travel (VMT) analysis for the Pentair Warehouse Building (Project) located on APN 511-0-200-265 east of the existing Pentair site and north of Los Angeles Avenue (State Route 118) City of Moorpark, California. This memorandum summarizes the findings the VMT analysis.

Project Description

The Project consists of the construction of a 90,566 square feet industrial building directly east of the existing Pentair facility. Based on the project statistics, 4,000 SF would be office space and 86,566 SF would be warehouse. The Project Site is currently vacant. **Figure 1** shows the Project Location Map. **Figure 2** shows the Project's Site Plan.

VMT Analysis Methodology and Performance Criteria

This VMT analysis complies with the updated California Environmental Quality Act (CEQA) guidelines that incorporates the requirements of Senate Bill 743 (SB 743). Generally, SB 743 moves away from using delay-based level of service (LOS) as the metric for identifying a project's significant impact to instead use VMT.

SB 743 requires the Governor's Office of Planning and Research (OPR) to establish recommendations for identifying and mitigating transportation impacts within CEQA, the document is referred to in this memorandum as OPR's Technical Advisory[1]. OPR's Technical Advisory recommends methodologies for quantifying VMT, significance thresholds for identifying a transportation impact, and screening criteria to quickly identify if a Project can be presumed to have a less than significant impact without conducting a full VMT analysis. Lead agencies are to adopt local guidelines appropriate for their jurisdiction. At the time of this analysis, the City of Moorpark has not formally adopted VMT guidelines. The County of Ventura released an Update to Section 27A(1) Transportation and Circulation Section of the Initial Study Assessment Guidelines, which includes VMT Analysis thresholds[2], however does not include a screening criteria. This VMT analysis has been prepared in accordance with OPR's Technical Advisory guidance, Ventura County's VMT thresholds, and discussions with City staff. The significance threshold utilized in this analysis is summarized in **Table 1**.

[1] Technical Advisory on Evaluating Transportation Impacts in CEQA, Governor's Office of Planning and Research, State of California, December 2018.
[2] Proposed Update to Section 27A(1) Transportation & Circulation Section of the Initial Study Assessment Guidelines, Ventura County. https://s29422.pcdn.co/wp-content/uploads/2020/06/VMT-Draft-for-Public-Review-Clean-Version.pdf

Reference: **Pentair Warehouse Building Project VMT Analysis**

Table 1 VMT Significance Threshold

Land Use Type	Metric	Threshold of Significance
Office and Industrial development	Work-based VMT per employee	15% less than existing citywide average work-based VMT per employee
Sources: OPR's Technical Advisory, Ventura County VMT Guidelines, and discussions with City staff.		

This Project is evaluated as an office and industrial project and work-based VMT per employee is the metric. The Project VMT rate is compared to the citywide average VMT rate minus 15 percent. If the Project VMT rate is greater than the significance threshold, the Project results in a significant impact and mitigation to reduce VMT would be necessary.

Project Screening

Prior to undertaking a project-level VMT analysis, OPR's Technical Advisory recommends applying a screening criteria. If a project satisfies one or more of the screening criteria, the project could be presumed to have a less-than-significant impact. **Table 2** summarizes the applicable screening categories. As shown, the Project does not meet any of these screening criteria.

Table 2 Project Screening Criteria and Threshold

Category	Criteria/Screening	Threshold	Project meet criteria?
CEQA Exemption	Any project that is exempt from CEQA is not required to conduct a VMT analysis.	None	No
Small Project	Small Projects can be screened out from completing a full VMT analysis.	If the Project generates less than 110 trips per day, the Project is assumed to have a less than significant impact.	No – a traffic study for the Project was prepared by Stantec in 2021. The traffic study determined that the Project would generate 238 average daily trips.
Transit Priority Area Screening	Projects within ½ mile of a major transit stop or a stop located along a high-quality transit corridor generally reduce VMT and therefore can be screened out from completing a full VMT analysis.	If the Project is within ½ mile of a major or high-quality transit stop/corridor[1], the Project is assumed to have a less than significant impact. The project should generally meet additional criteria related to FAR and plan consistency.	No
Low VMT Area Screening	Residential and employment-generating projects that are located in areas with low VMT and that are similar in character to the existing development can be screened out from completing a full VMT analysis.	If the Project is in a low VMT area the Project is assumed to have a less than significant impact. A low VMT area is defined as Traffic Analysis Zones that have existing home-based or home-based work VMT per capita that is 85% or less of the existing citywide or countywide average	No – Using data from the Ventura County Transportation Model, the Project is not located in a low VMT area.

FAR = Floor Area Ratio; SCS = Sustainable Community Strategy; Sources: OPR's Technical Advisory

[1] A major transit stop is defined as the intersection of two or more major bus routes with a frequency service interval of 15 minutes or less during the morning and afternoon peak commute periods. A high-quality transit corridor is defined as an existing corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours.

Reference: **Pentair Warehouse Building Project VMT Analysis**

Project VMT Analysis

A project-level VMT analysis was conducted with VMT statistics from the Ventura County Transportation Model[3] (VCTM). As shown in **Table 3**, the Project is located in traffic analysis zone (TAZ) 60123101 and the corresponding work-based VMT in that TAZ is 23.66 VMT per employee. Since the proposed Project land use is similar to the existing land use in the TAZ, the Project can be expected to exhibit the same trip making characteristics and the Project VMT rate would be the consistent with the existing TAZ VMT rate. The citywide average work-based VMT is 23.13 per employee and, based on County guidelines, a 15 percent reduction is applied to establish the threshold of significance for CEQA analysis, which equates to19.66 work-based VMT per employee. Therefore, the Project would be slightly above the citywide average but would require a 16.9 percent VMT reduction to be less than the threshold of significance.

Table 3 Project VMT Impact Summary

Description	Work-based VMT per employee
TAZ 60123101 (Project TAZ)	23.66
Moorpark Citywide Average	23.13
Moorpark Citywide Average with 15% Reduction (Threshold of Significance for CEQA)	19.66
Difference	4.00
Reduction needed	16.91%
Significant Impact	**Yes**
Source: VCTM 2016 SB 743 Spreadsheet, VCTC.	

VMT Reduction Strategies

The California Air Pollution Control Officers Association (CAPCOA) Handbook for Analyzing Greenhous Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity[4] (referred to here as GHG Handbook) provides substantial evidence that various commuter trip reduction measures can reduce VMT. Presented below is a measure that is appropriate for the Project and could avoid or substantially reduce the Project's significant impact.

MM-1: The Project will provide an employer-sponsored vanpool (CAPCOA T-11). At a minimum 12 percent of employees will need to participate in the vanpool program. The Project will implement the program and costs for the employer could include the vehicles, labor costs of the driver, and other incentives for employee participation. The Project could select to implement this measure or other equivalent commuter trip reduction measure(s) that would achieve a similar VMT reduction.

Commuters who participate in vanpool programs usually travel longer distances to get to work. The mode shift from single-occupancy vehicle that travel long distances to a shared vehicle reduces commute VMT. To

[3] 2016 SB 743 Spreadsheet Ventura County Transportation Model, Ventura County Transportation Commission, https://www.goventura.org/work-with-vctc/traffic-model/.
[4] Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity, California Air Pollution Control Officers Association, December 2021.

estimate the Project's potential VMT reduction with this measure, the formula from strategy T-11 in CAPCOA is used[5] and results in a 16.93 percent reduction in commute VMT[6]. The following assumptions include:

- 12 percent of employees will participate in the vanpool program
- average length of one-way vehicle commute trip in Ventura County is 12.7 miles
- average length of one-way vanpool commute trip is 25 miles per trip
- vanpool occupancy is 5

A minimum of 12 percent of employee participation is needed to reduce VMT rate to a level below the threshold. The average length of one-way vehicle commute trip in Ventura County is estimated using aggregated weekday trip length data for work/school location in "Oxnard-Thousand Oaks-Ventura" Core-Based Statistical Area for the dates between March 2021 – May 2021 (See Attachment A). The average length of one-way vanpool commute trip is 25 miles and represents an approximate distance to/from the San Fernando Valley and Santa Clarita Valley. Lastly, CAPCOA notes that a vanpool typically carries between 5 to 15 people. This analysis assumes a conservative 5 occupants per vehicle.

A VMT reduction of 16.91 percent is needed to reduce the Project VMT rate to a less than significant level. **Table 4** summarizes the resulting Project VMT rate with the commute trip reduction measure.

Table 4 Project VMT Summary with Mitigation

Description	Work-based VMT per employee
Project VMT rate	23.66
Mitigation (vanpool) reduction	-16.93%
Project with mitigation	19.65
Moorpark Citywide Average with 15% Reduction (Threshold of Significance for CEQA)	19.66
Is Project above or below Citywide Threshold?	Below
Significant Impact with mitigation?	**No**

As shown in **Table 4**, the Project would have a less than significant impact on VMT with the mitigation measure.

Cumulative VMT Analysis

The City of Moorpark is currently updating their General Plan. While the General Plan was last updated in 1992, revisions to the General Plan Map have been made as recent as October 2020. The Project site is zoned for I-2 Medium Industrial. The Medium Industrial land use is described as light manufacturing, processing, fabrication, and other non-hazardous industrial uses. The Project land use corresponds with this description and is therefore consistent the General Plan. Since the Project is consistent with the General Plan, it would also be consistent with Connect SoCal, the long-range Regional Transportation Plan and

[5] % Change in VMT = **(**((1- employee participation %) x (average length of one-way vehicle commute trip in region)) + (employee participation %) x (average length of one-way vanpool commute trip/average vanpool occupancy))**)** ÷ **(**((1- employee participation %) x (average length of one-way vehicle commute trip in region)) + (average length of one-way commute trip in region x average vanpool commute trip))**)** - 1

[6] (((1-12%) x (12.7 miles per trip)) + (12% x (25 miles per trip/5 occupants))) ÷ (((1-12%) x (12.7 miles per trip)) + (12.7 miles per trip x 25 miles per trip)) - 1 = -16.93% reduction in commute VMT

Reference: **Pentair Warehouse Building Project VMT Analysis**

Sustainable Communities Strategy (RTP/SCS) for the Southern California Association of Governments (SCAG) region.

According to OPR's Technical Advisory[7], when a project has a less than significant impact at the project level, the project would not have a cumulative impact. Since the Project was found to have a less than significant impact, the Project would also have a less than significant cumulative impact.

Active Transportation

Since the Project is located in a sparsely developed, primarily agricultural area of the city, pedestrian sidewalks are not present near the Project Site. However, A Class III bikeway, otherwise known as an on-street route for bicyclists that is shared with motorists, is designated adjacent to the Project Site on Los Angeles Avenue. Los Angeles Avenue can be used to further access the network of bicycle facilities within the city. The Project would not block, remove, or create barriers for pedestrians or bicyclists.

Transit

Moorpark City Transit (MCT) operates bus lines within the city and specifically operates two weekday routes (Route 1 and Route 2), both of which stop approximately ¾ of a mile east of the Project site near the intersection of Tierra Rejada Road and Courtney Lane. These routes connect to public facilities and shopping. Routes 1 and 2 also stop at the Moorpark Metrolink Station, which additionally provides a connection to VCTC Routes 77 and 70-73X. MCT does not operate lines on weekends or City holidays. The Project would not block, remove, or create barriers for transit utilization.

Conclusion

A VMT analysis was conducted for the Project. The Project does not meet any of the screening criteria recommended in OPR's Technical Advisory. A project-level VMT impact analysis was conducted using VMT statistics from VCTM. The Project VMT rate is 23.66 VMT per employee. The citywide average work-based VMT is 23.13 per employee and based on County guidelines a 15 percent reduction is applied to establish the threshold of significance for CEQA analysis, which equates to 19.66 work-based VMT per employee. The Project would be slightly above the citywide average but would require a 16.9 percent VMT reduction to be less than the threshold of significance. Implementation of an employer-sponsored vanpool program would reduce VMT by approximately 16.93percent and would reduce the Project VMT rate to a less than significant level (19.65 VMT per employee).

Since the Project is found to have a less than significant impact at the project-level, the Project would also have a less than significant cumulative impact since it is consistent with the current RTP/SCS. Lastly, the Project would not block, remove, or create barriers for pedestrians, bicyclists, or transit.

[7] Page 6 from Technical Advisory on Evaluating Transportation Impacts in CEQA, Governor's Office of Planning and Research, State of California, December 2018.

Reference: **Pentair Warehouse Building Project VMT Analysis**

If you have any questions on the above material, please feel free to contact Daryl or Maria to discuss.

Stantec Consulting Services Inc.

Daryl Zerfass PE, PTP
Principal, Transportation Planning & Traffic Engineering
Phone: (949) 923-6058
Daryl.Zerfass @stantec.com

Maria Morris AICP, PTP
Senior Transportation Planner
Phone: (949) 923-6072
Maria.Morris@stantec.com

Attachments: Figure 1 Project Location Map
Figure 2 Project Site Plan
Attachment A: Average Length of One-Way Commute Trip in Ventura County

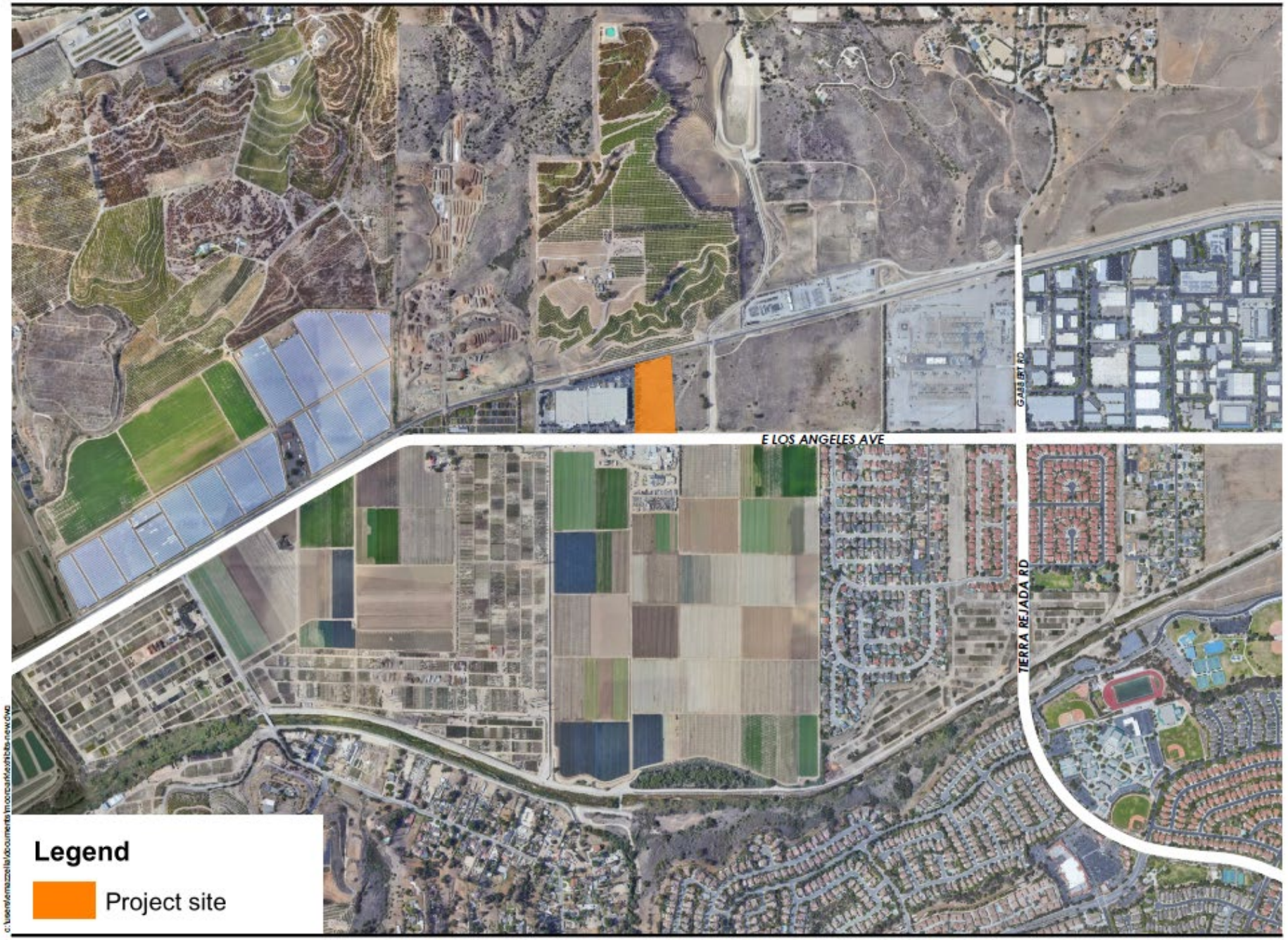
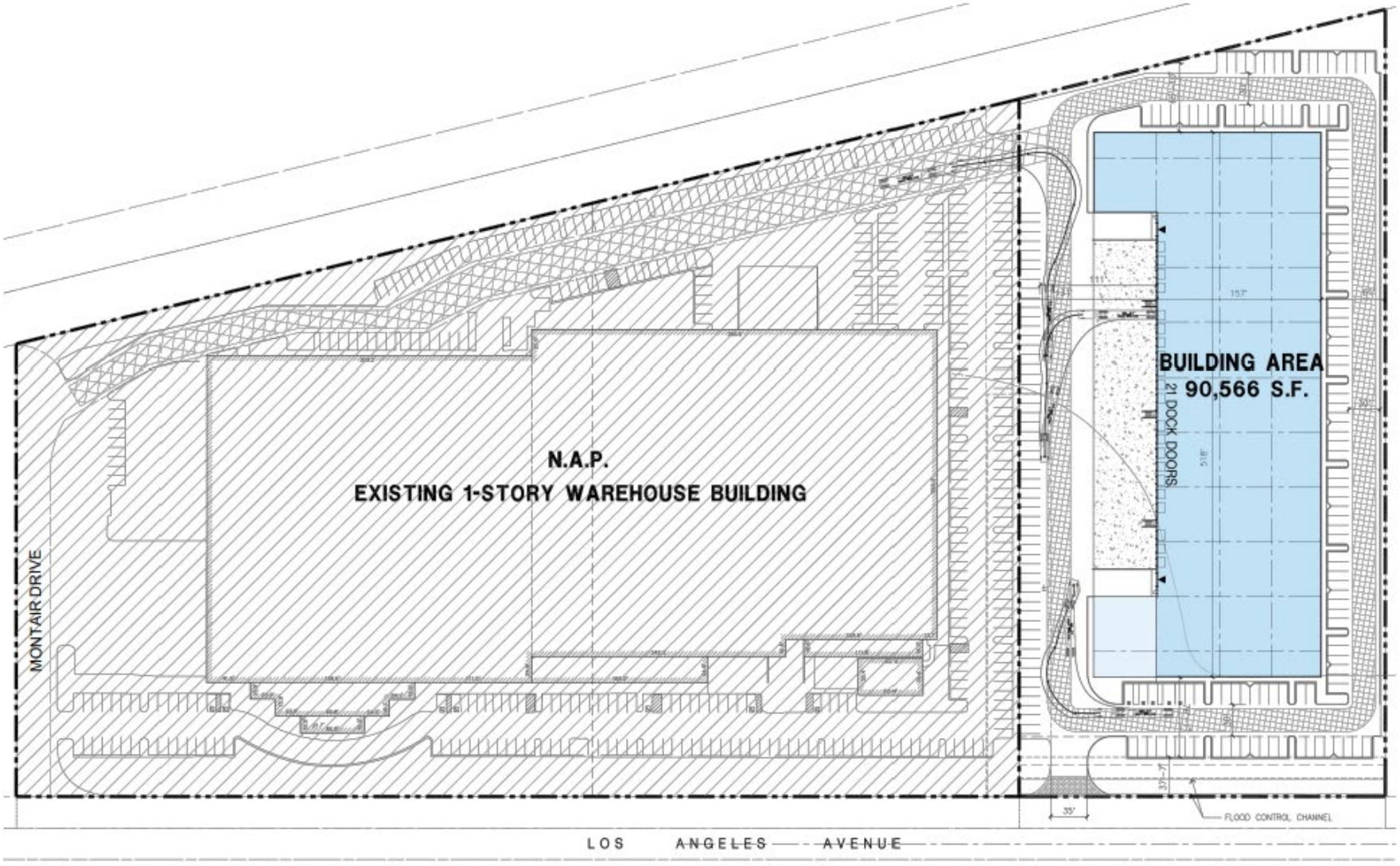


Figure 1

Project Location Map

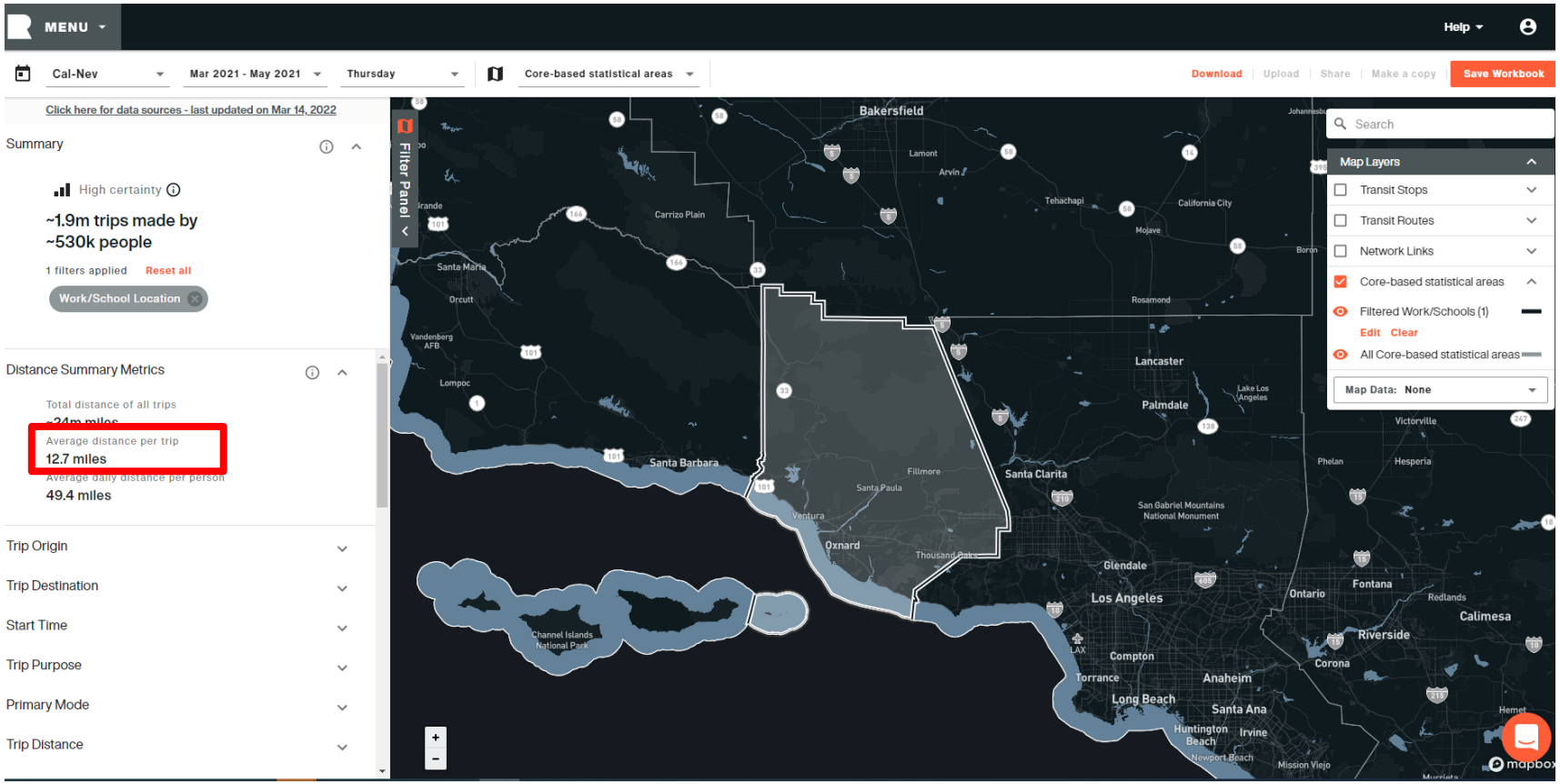


Source: HPA Architecture

Figure 2
Project Site Plan

Reference: **Pentair Warehouse Building Project VMT Analysis**

Attachment A: Average Length of One-Way Vehicle Commute Trip in Ventura County



Source: https://replicahq.com/

MITIGATION MONITORING AND REPORTING PROGRAM

PENTAIR WAREHOUSE EXPANSION PROJECT
MOORPARK, CALIFORNIA

Prepared for:

CITY OF MOORPARK
799 Moorpark Avenue
Moorpark, California 93021

Prepared by:

CHAMBERS GROUP, INC.
600 West Broadway, Suite 250
Glendale, California 91204

July 2022

MITIGATION MONITORING AND REPORTING PROGRAM

Public Resources Code, Section 21081.6 (Assembly Bill 3180) requires that mitigation measures identified in environmental review documents prepared in accordance with California Environmental Quality Act (CEQA) are implemented after a project is approved. Therefore, this Mitigation Monitoring and Reporting Program (MMRP) has been prepared to ensure compliance with the adopted mitigation measures during the construction and operation phase of the Pentair Warehouse Expansion Project.

The City of Moorpark is the agency responsible for implementation of the mitigation measures identified in the MND. This MMRP provides the City of Moorpark with a convenient mechanism for quickly reviewing all the mitigation measures including the ability to focus on select information such as timing. The MMRP includes the following information for each mitigation measure:

- The phase of the project during which the required mitigation measure must be implemented;
- The phase of the project during which the required mitigation measure must be monitored; and
- The enforcement agency.

The MMRP includes a checklist to be used during the mitigation monitoring period. The checklist will verify the name of the monitor, the date of the monitoring activity, and any related remarks for each mitigation measure.

MITIGATION MONITORING AND REPORTING PROGRAM Pentair Warehouse Expansion Project							
Mitigation Measure	Implementation Phase	Monitoring Phase	Enforcement Agency	Level of Significance After Mitigation	Verification of Compliance		
					Initial	Date	Remarks
Biological Resources							
MM-BIO-1: A nesting bird pre-construction survey will be conducted by a Qualified Biologist and submitted to the City three days prior to demolition and/or vegetation removal activities during nesting bird season (February 15 through August 31). Should nesting birds be found, an exclusionary buffer will be established by a Qualified Biologist. The buffer may be up to 500 feet in diameter depending on the species of nesting bird found. This buffer will be clearly marked in the field by construction personnel under guidance of the Qualified Biologist, and construction or clearing will not be conducted within this zone until the Qualified Biologist determines that the young have fledged or the nest is no longer active. Nesting bird habitat within the Project site will be resurveyed during bird breeding season if a lapse in construction activities lasts longer than seven days.	Prior to construction	Prior to and during construction	City of Moorpark	Less than Significant			
Cultural Resources							
MM-CUL-1: Prior to issuance of grading permits, the Applicant shall be required to obtain the services of a qualified project archaeologist to remain on call for the duration of the proposed ground-disturbing construction activity. The archaeologist selected must be approved in writing by the Community Development Director. Prior to construction commencing, all construction personnel associated with earth-moving equipment, drilling, grading, or excavating shall be provided with basic training. The training shall be completed by the Applicant-retained project archaeologist and shall include written notification of the restrictions regarding disturbance and/or removal of any portion of archaeological deposits and the procedures to follow should a potential resource be identified during construction activity. The construction contractor, or its designee, shall be responsible for implementation of this measure. A tribal monitor shall be provided an opportunity to attend the pre-construction briefing, if requested. The project archaeologist shall be on call and available to contact in the event of any unanticipated discovery of archaeological or historical resources during the proposed construction activity. If any archeological or historical resources are uncovered during grading or excavation operations, all grading or excavation shall immediately cease in the immediate area, a 50-foot buffer area around the discovery shall be cordoned off, and the discovery must be left untouched. The Applicant, in consultation with the project archaeologist, shall assure the preservation of the resource and immediately contact the Community Development Director by phone, in writing by email, or hand-delivered correspondence informing the Director of the find. In the absence of the Director, the Applicant shall so inform the City Manager. Additionally, all consulting Native American Tribal groups that requested notification of any unanticipated discovery of archaeological resources on the Project shall be notified appropriately. The Applicant-retained project archaeologist shall provide an assessment regarding the sensitivity of the discovery and, if avoidance is not feasible, recommend the appropriate treatment and/or recovery procedures for discovery. The Applicant shall pay for all costs associated with the investigation and, if required, the treatment and/or recovery of the discovery.	Prior to construction	Prior to and during construction	City of Moorpark	Less than Significant			
MM-CUL-2: At the completion of all ground-disturbing activities, the project archaeologist shall prepare an Archaeological Resources Monitoring Report summarizing all monitoring efforts and observations, as performed, and any and all prehistoric or historic archaeological finds as well as providing follow-up reports of any finds to the South-Central Coastal Information Center (SCCIC), as required.	After construction	After construction	City of Moorpark	Less than Significant			

MITIGATION MONITORING AND REPORTING PROGRAM Pentair Warehouse Expansion Project							
Mitigation Measure	Implementation Phase	Monitoring Phase	Enforcement Agency	Level of Significance After Mitigation	Verification of Compliance		
					Initial	Date	Remarks
Land Use							
MM-LU-1: Install a signal at the intersection of Los Angeles Avenue and Montair Drive	Prior to issuance of Certificate of Occupancy for the building	N/A	City of Moorpark	Less than Significant			
MM-LU-2: Restrict the proposed driveway on Los Angeles Avenue between the existing facility and proposed facility to emergency vehicles only and design to accommodate emergency vehicle turning requirements	During operation	N/A	City of Moorpark	Less than Significant			
Transportation							
MM-TRA-1: The Project will provide an employer-sponsored vanpool (CAPCOA T-11). At a minimum 12 percent of employees will need to participate in the vanpool program. The Project will implement the program, and costs for the employer could include the vehicles, labor costs of the driver, and other incentives for employee participation. The Project could select to implement this measure or other equivalent commuter trips reduction measure(s) that would achieve a similar VMT reduction, potential including but not limited to, rideshare incentive programs, ride matching services, discounted transit expense program, end of trip facilities, or telecommuting/alternative work schedules.	During operation	For the first 5 years of operation	City of Moorpark	Less than Significant			